THE WORLD TRADE CENTER

THE PORT OF NEW YORK AUTHORITY

SUB GRADE

PLUMBING

MINORU YAMASAKI & ASSOCIATES
MINORU YAMASAKI, ARCHITECT

EMERY ROTH & SONS
RICHARD ROTH, ARCHITECT

SKILLING HELLE CHRISTIANSEN & ROBERTSON
STRUCTURAL ENGINEERS
FORMERLY WORTHINGTON SKILLING HELLE & JACKSON

JAROS BAUM & BOLLES
MECHANICAL ENGINEERS

JOSEPH R. LORING & ASSOCIATES
ELECTRICAL ENGINEERS

THE PORT OF NEW YORK AUTHORITY
PAVING, UTILITIES, FOUNDATIONS

TENANT STORAGE
EL. 242'-0"

TOWER 2
EL. 242
FOR PIPING WITHIN TOWER
SEE DWG. P-J-2

TENANT STORAGE
EL. 242'-0"

STAIR 1-3

SHAFT 1

SHAFT 2

SHAFT 3

SUMP #1

SUMP #2

SUMP #3

NORTH PROJECTION

MATCH LINE N 4738.00

KEY PLAN

NOTES
FOR GENERAL NOTES & SYMBOLS SEE DWG. P-X-1
FOR SUMP & VECTORS SEE DWG. P-J-X-2
TEMPORARY 'C' DRY STANDPIPE - PROVIDE BITEND 2½" HOSE VALVES 150' MINIMUM ABOVE FLOOR.

NO.	DATE	BY	REVISIONS
10	7-22-70	BG-SS	Sub
9	5-20-70	..-41	SJC
8	5-20-70	SG-66	SJC
7	12-19-69	SG-S	SJC
6	7-17-..	SG-13	J.C.
5	6-13-69	SG-15	J.C.
4	3-..-69	SG-10	B.S.
3		SG-6	K.J.
2			
1			

NO.	DATE	BY	REVISIONS
12	5-8-72	16-191	RB
12	10-12-72		AJ
11	6-27-72	SG-182	MK

APPROVED

CHIEF PLANNER ENGINEER

DATE

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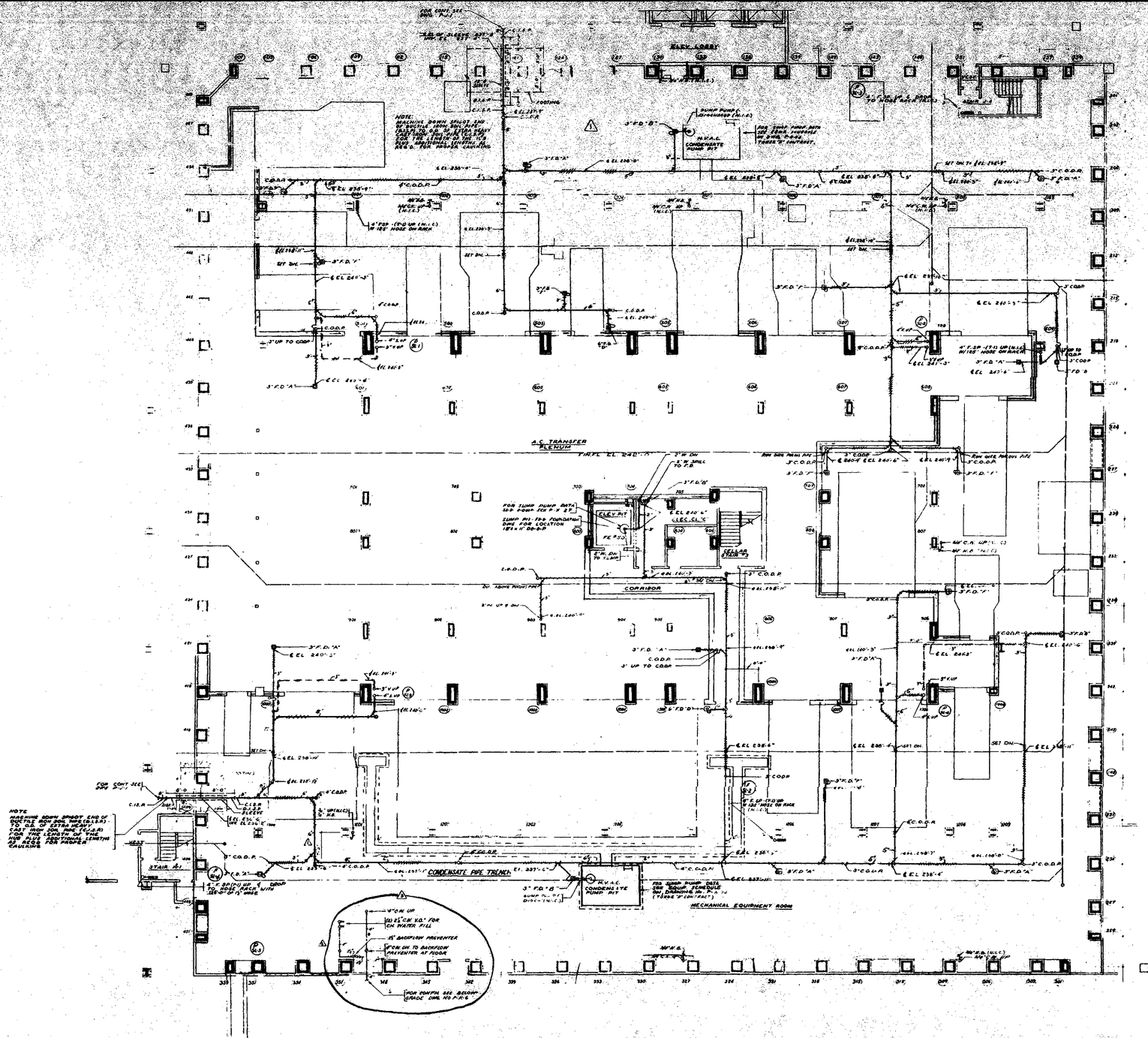
THE PORT OF NEW YORK AUTHORITY
PAVING, UTILITIES, FOUNDATIONS

TITLE
SUB-GRADE PLAN-ZONE 'J'
SUB-LEVEL 5 (EL 242)

DRAWN	J.C.	CHECKED	P.J.S.
SCALE	1/8" = 1'-0"	DATE	5-16-69
PROJECT NUMBER		SURVEY	
DRAWING NUMBER	P-J-1		



NOTES:
1. FOR GENERAL NOTES AND SYMBOLS SEE DRAWING No. P-J-1.
2. ALL FLOOR DRAINS AND WASTE, SOIL AND VENT PIPING INDICATED ON THIS DRAWING AS UNDER THE ELEV. PIT SLAB WILL BE UNDER THIS CONTRACT AND THE P. PING WILL TERMINATE WITH A HUB CONNECTION DIRECTLY ABOVE THE ELEV. PIT SLAB. ALL OTHER PIPING IS UNDER ANOTHER CONTRACT (TOWER A)
3. THE DIMENSION INDICATED FROM E WALL TO E COLUMN ARE APPROXIMATE. FOR ACTUAL LOCATIONS SEE PIPING WITHIN TRENCH SEE FOUNDATION DWGS BY OTHERS

CONTRACT NO. DRAWING date

NO.	DATE	REVISIONS	BY
1	7/16		
2	8/16		
3	5/17		
4	9/19		

APPROVED: CHIEF, PLUMBING DIVISION DATE

THE WORLD TRADE CENTER
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WORTHINGTON, SKILLING, HELLE & JACKSON STRUCTURAL ENGINEERS	JAROS, BAUM & BOLLES MECHANICAL ENGINEERS
JOSEPH R. LORING & ASSOCIATES ELECTRICAL ENGINEERS	THE PORT OF NEW YORK AUTHORITY PAVING, UTILITIES, FOUNDATIONS

1/4" = 1'-0" SCALE 0 5 0 5 10 15 20 FOOT

TITLE: SUB-GRADE PLAN-ZONE J
SUB-LEVEL 5 - EL. 242
TOWER A

DRAWN	G.C.	CHECKED	F.A.S.
SCALE	1/4" = 1'-0"	DATE	5-65
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-J-2		

MATCH LINE - N 4738.00
FOR CONTINUATION SEE DWG. P-J-1

TOWER 'A'
EL. 242
FOR PIPING WITHIN TOWER
SEE DWG. P-J-2

TOWER 'B'
EL. 242
FOR PIPING WITHIN TOWER
SEE DWG. P-K-4

ABSOLUTE OIL SEPERATOR
6" PIPE SIZE 185 GPM
STEEL EXTENSIONS AS REQ'D
SCORIATED COVER

STEAM METER ROOM
EL. 242'-0"

REF. FAN ROOM
EL. 242'-0"

TENANT STORAGE
EL. 242'-0"

STORAGE AREA

FAN ROOM A

UNASSIGNED AREA #5

UNASSIGNED AREA #6

UNASSIGNED AREA

STAIR K-1

STAIR K-3

STAIR K-4

STAIR K-6

STAIR K-7

VIVAL REPAIR MAINTENANCE RM.

EXISTING SUMP PUMPS

EXISTING

EXHAUST PLENUM

STRAINERS

SECTION A-A

SECTION B-B

KEY PLAN

NORTH

NOTES:
1. FOR GENERAL NOTES & SYMBOLS SEE DWG. P-K-27
2. TEMPORARY OR STANDPIPE - PROVIDE (2) TWO 2½" HOSE VALVES, 2'-0" MIN. ABOVE FLOOR
3. FOR TYPICAL TRENCHING DETAILS SEE DWG. P-K-19
4. FOR BUS DUCT LOCATION OF TOP FLOOR SEE DWG. P-K-30, P-K-31 & P-K-32
5. THE DIMENSIONS INDICATED ON PLANS & ELEVATIONS OF PIPING ARE FOR FUTURE CONSTRUCTION ONLY
6. ALL PIPING FOR THE STEAMERS SHALL BE EPOXY COATED UP TO THE CONN. WITH G.I. ELB.

NO.	DATE	REVISIONS BY	NO.	DATE	REVISIONS BY
10	6-5-70	SG.	85		D.T.
9	5-20-70	SG.	67		S.J.C.
8	3-10-70	SG.	33		J.L.
7	1-19-70	SG.	14		S.J.C.
6	12-10-69	SG.	16		S.J.C.
5	6-15-67	M.	23		J.C.
4	6-30-66	SG.	95		J.C.
3	5-19-66	SG.	10		J.C.
2	11-19-65	SG.	6		J.C.
1	7-1-65	SG.	2		J.C.

APPROVED
CHIEF, PLANNING DIVISION
DATE

THE WORLD TRADE CENTER
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MECHANICAL ENGINEERS

JOSEPH R. LORING & ASSOCIATES
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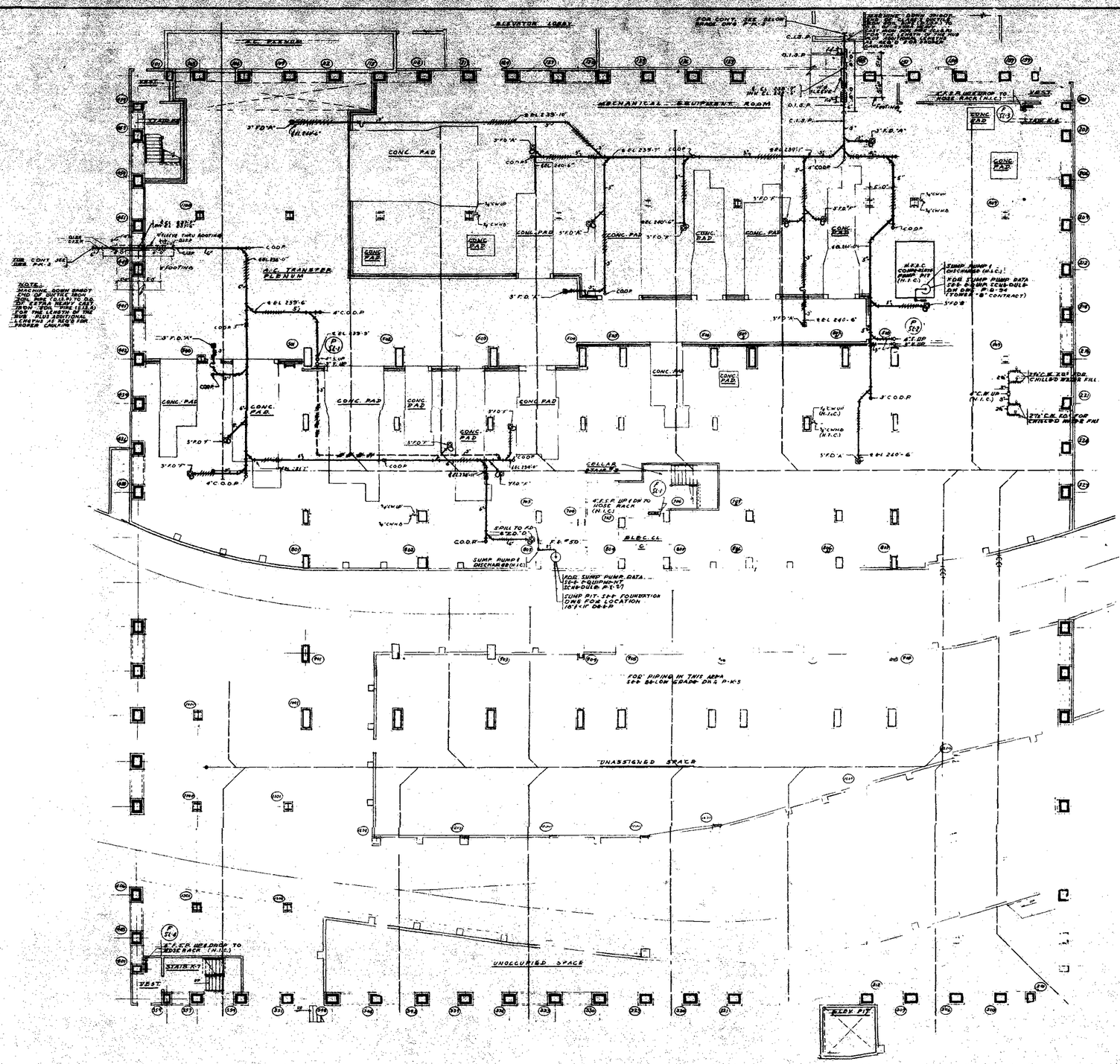
THE PORT OF NEW YORK AUTHORITY
PAVING, UTILITIES, FOUNDATIONS

TITLE: SUB-GRADE PLAN-ZONE 'K'
SUB-LEVEL 5-EL. 242

DRAWN	C.C.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-15-68
PROJECT NUMBER		SHEET	OF

DRAWING NUMBER: P-K-3


NORTH
ELEVATOR LOBBY
MECHANICAL EQUIPMENT ROOM
CONC. PAD
CONC. PAD
CONC. PAD

UPPER PART OF UNOCCUPIED AREA

NORTH PROJECTION

STAIR J-1

STAIR J-2

STAIR J-3

STAIR J-4

SUBSTATION No. 3
EL. 250'-0"

TENANT STORAGE
EL. 253'-0"

TENANT STORAGE
EL. 253'-0"

TOWER "A"
EL. 253
FOR PIPING WITHIN TOWER
SEE DWG. P-A-3

UPPER PART OF EMERGENCY GENERATOR RM. PE

ELEVATOR LOBBY

SHAFT #1

SHAFT #2

SHAFT #4

SHAFT #5

SHAFT #6

SEE NOTE No. 5

SEE DETAIL ON DWG. P-K-18

SEE DETAIL ON DWG. P-A-18

SEE NOTE No. 2 THIS DWG.

SEE NOTE No. 4 THIS DWG.

SEE NOTE No. 6 THIS DWG.

PLATFORM A

PLATFORM B

PLATFORM C

TRACK 1

TRACK 2

TRACK 3

TRACK 4

MATCH LINE N 4735
FOR CONTINUATION SEE DWG P-K-6

NOTE
1. FOR GENERAL NOTES & SYMBOLS SEE DWG P-K-17
2. TEMPORARY 6" DRY STANDPIPE - PROVIDE (2) THD 2½" HOSE VALVES 5'-0" MINIMUM ABOVE FLOOR.
3. FOR PIPING TO TOILETS ON PLATFORM SEE DETAIL SHEET DWG. No. P-K-18.
4. FOR ACTUAL LOCATION OF F.H. CABINETS & SMOKE DOORS ON PLATFORM SEE ARCHITECTURAL DRAWINGS.
5. INSTALL PIPING AFTER REMOVAL OF EXISTING RAIL TUBES.

NO.	DATE	REVISIONS	BY
10	5-20-70	SG-60	MG
9	3-20-70	SG-67	SJC
8	3-10-70	SG-66	BJC
7	12-23-69	24-16	JL
6	11-19-69	" -16	GM
5	11-19-69	SG-5	SM
4	6-3-69	SG-15	JC
3	3-19-68	SG-10	BM
2	1-21-69	SG-6	JC
1	1-9-1968	SG-2	JC

APPROVED

CHIEF, PLANNING DIVISION

DATE

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JAROS, BAUM & BOLLES
MECHANICAL ENGINEERS

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THE PORT OF NEW YORK AUTHORITY
PAVING, UTILITIES, FOUNDATIONS

TITLE: SUB-GRADE PLAN-ZONE 'J'
SUB-LEVEL 4-EL 253'

DRAWN	J.C.	CHECKED	F.A.S.
SCALE	1/8"=1'-0"	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	PJ-5		

MATCH LINE
FOR CONTINUATION SEE DWG. P-Y-5

TOWER "A"
FOR PIPING WITHIN TOWER SEE DWG. P-A-3

H.V.A.C. REF. MAINTAINENCE ROOM

UPPER PART OF GENERATOR ROOM

UPPER PART OF STEAM METER ROOM EL. 248'-0"

UPPER PART OF STORAGE EL. 248'-0"

REFRIGERATION ROOM-OPERATING LEVEL

UPPER PART OF REFRIGERATION EXHAUST PLENUM AT EL. 242'-0"

LOADING PLATFORM EL. 250'-0"

PLATFORM "C" EL. 249'-0"

PLATFORM "A" EL. 249'-0"

TOWER "B"
EL. 253
FOR PIPING WITHIN TOWER SEE DWG. P-B-3

WORK PLATFORM EL. 249'-0"

TENANT STORAGE EL. 230'-0"

TRANSFORMER ROOM

UPPER PART OF UNASSIGNED AREA

UPPER PART OF AREAS BETWEEN TRACKS

SOUTH PROJECTION

DETAIL OF VALVE OUTLETS FOR H.V.A.C.
NO SCALE

DETAIL OF FILL CONNECTIONS
NO SCALE

NOTES:
1. FOR GENERAL NOTES & SYMBOLS SEE DWG. P-X-21
2. TEMPORARY & DRY STANDPIPES, PROVIDE #1 TWO 2½" HOSE VALVES 8'-0" MIN. ABOVE FLOOR
3. FOR PIPING TO TOILETS ON PLATFORM SEE DETAIL SHEET DWG. No. P-X-18.
4. FOR ACTUAL LOCATION OF F.H. CABINETS & BOX HYDRANTS ON PLATFORM SEE ARCHITECTURAL DRAWINGS.
5. S. & F. PIPE IN REFRIGERATION ROOM AT OPERATING LEVEL OF TO BE PAINTED.
6. ALL PIPING IN THE [illegible] SHALL BE EPOXY COATED.

NO.	DATE	BULL. NO.	BY
13	12-12-75	195	SB
12	12-3-71	SC 145	DN
11	10-6-71	SC 107	DN

REVISIONS

NO.	DATE	BULL. NO.	BY
10	6-27-70	SC 118	SK
9	3-30-70	SC 89	JH
8	3-17-70	SC 81	JH
7	3-30-70	SC 64	MH
6	2-2-70	SC 37	TC
5	2-20-69	SC 147	TC
4	12-19-68	SC 16	TC
3	3-27-68	SC 10	TC
2	2-29-68	SC 8	TC
1	1-15-68	SC 2	TC

REVISIONS

APPROVED
CHIEF, PLANNING DIVISION
DATE

THE WORLD TRADE CENTER

THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES — MINORU YAMASAKI, ARCHITECT
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JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS
EMERY ROTH & SONS — RICHARD ROTH, ARCHITECT
JAROS, BAUM & BOLLES — MECHANICAL ENGINEERS
THE PORT OF NEW YORK AUTHORITY — PAVING, UTILITIES, FOUNDATIONS

TITLE: SUB-GRADE PLAN-ZONE "K" SUB-LEVEL 4-EL. 250'-253'

DRAWN	J.C.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-K-6		

PARKING AREA "I"

PARKING AREA
EL. 264'-0"

TOWER "A"
EL. 264
FOR PIPING WITHIN TOWER
SEE DWG. P-A-5

TENANT STORAGE EL. 264'-0"

FAN ROOM EL. 264'-0"

PATH MEZZANINE
EL. 284'-0"

RAMP U
UP TO EL. 274'-0"

EL. 264'-0"

AUXILIARY SERVICES

ESCALATOR #1

ESCALATOR #2

ELEVATOR LOBBY

A.C. PLENUM

NORTH PROJECTION

KEY PLAN

NORTH

MATCH LINE N 473500
FOR CONTINUATION SEE DWG P-K-8

NOTE
1. FOR GENERAL NOTES & SYMBOLS SEE DWG P-A-1
2. TEMPORARY 6" DRY STANDPIPE - PROVIDE (2) THRD 2½" HOSE VALVES 5'-0" MINIMUM ABOVE FLOOR.
3. SUBSTITUTE FIRE HOSE CABINETS, AS MANUFACTURED BY J. L. INDUSTRIES MODEL "ACADEMY 200 S" WITH STAINLESS STEEL FRONTS IN PUBLIC AREAS AT PATH PLATFORM AND MEZZANINE LEVELS IN LIEU OF SPECIFIED FIRE HOSE CABINETS IN THESE AREAS

NO.	DATE	REVISIONS	BY	NO.	DATE	REVISIONS	BY
				10	3-20-70	56-33	SJG
				9	1-30-70	56-66	SJG
				8	12-19-69	56-10	JC
				7	11-19-69	56-16	SJG
				6	11-19-69	56-5	SJG
				5	6-3-69	56-15	JC
				4	5-9-69	56-10	BS
13	11-7-74	56-161	SJG	3	1-27-69	56-6	FU
12	7-12-71	56-161	SJG	2	9-1-68	56-5	JE
11	5-10-10	56-60	WS	1	1-10-68	56-5	JC

APPROVED
CHIEF, PLANNING DIVISION
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MECHANICAL ENGINEERS

JOSEPH R. LORING & ASSOCIATES
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THE PORT OF NEW YORK AUTHORITY
PAYING, UTILITIES, FOUNDATIONS

TITLE
SUB-GRADE PLAN-ZONE "J"
SUB-LEVEL 3-EL 264'

DRAWN	J.C.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-J-57		

MATCH LINE - N 4700.00
FOR CONTINUATION SEE DWG. P-J-7

TOWER 'A'
FOR PIPING WITHIN TOWER EXCEPT AS NOTED SEE DWG P-A-5

OPERATING LEVEL OF REFRIGERATOR ROOM
EL. 269'-0"

SWITCHGEAR ROOM
EL. 264'-0"

TOILETS
LOCKERS
EL. 269'-6

CONTROL ROOM
EL. 269'-6"

TOWER 'B'
EL. 264
FOR PIPING WITHIN TOWER EXCEPT AS NOTED SEE DWG P-B-5

PARKING AREA
EL. 264'-0"

TENANT STORAGE
EL. 264'-0"

PARKING AREA
EL. 264'-0"

RAMP 8.3% TO EL. 264'-0"

SOUTH PROJECTION

NOTES:
1. FOR GENERAL NOTES & SYMBOLS SEE DWG. P-X-27
2. TEMPORARY S. DRY STANDPIPE: PROVIDE (2) TWO 2½" HOSE VALVES 3'-0" MIN. ABOVE FLOOR
3. INSTALL PIPING AFTER REMOVAL OF EXISTING PATH TUBES.
4. FOR PIPING TO TOILETS ON PLATFORM SEE DETAIL SHEET DRAWING NO. P-X-18.
5. PIPING FROM THE STRAINERS SHALL BE EPOXY COATED.

NO.	DATE	DWG. NO.	BY
10	12-3-71	56-168	BV
9	10-6-71	56-123	JJ.
8	7-29-71	56-98	JJG
7	7-27-70	56-99	BJG
6	3-31-70	56-51	J.J.
5	9-8-69	56-33	J.J.
4	10-19-68	56-16	JJG
3	5-31-68	56-10	B.J.
2	5-16-68	56-6	J.J.
1	5-15-68	56-2	J.J.

REVISIONS

APPROVED
CHIEF, PLANNING DIVISION
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PAVING, STRUCTURES, FOUNDATIONS

TITLE
SUB-GRADE PLAN-ZONE 'K'
SUB-LEVEL EL 264

DRAWN	J.C.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-15-68
PROJECT MANAGER		SURVEY	
DRAWING NUMBER	P-K-8		

PARKING AREA
EL. 274'-0"

TOWER "A"
EL. 274
FOR PIPING WITHIN TOWER
SEE DWG. P-A-6

TENANT STORAGE
EL. 274'-0"

PRIMARY DISTRIBUTION ROOM
EL. 274'-0"

STORAGE
EL. 274'-0"

RAMP 'K'

RAMP 'J'

RAMP 'B'

UPPER LEVEL OF PATH MEZZANINE
EL. 282'-0"

AUX. SERVICES

KEY PLAN

NORTH PROJECTION

MATCH LINE N 7888.00
FOR CONTINUATION
SEE DWG P-K-10

NOTES:
1. FOR GENERAL NOTES & SYMBOLS SEE DWG. P-A-2.
2. TEMPORARILY CAP DRY STANDPIPE ABOVE 9TH FLOOR. PROVIDE WITH 2½" MALE INLETS 30'± ABOVE FLOOR.
3. CONTRACTOR TO PROVIDE & INSTALL COPPER PAN (FOR SIZE & LOCATION SEE ELECT. DRAWING(S) PIPE 1" MASTIC TO ELEV. 274' SLAB.

NO.	DATE	REVISIONS	BY
10	5-11-70	64-33	S.M.
9	3-19-70	EC-66	S.A.C.
8	12-19-69	25-16	J.T.
7	11-19-69	24-16	S.J.C.
6	11-19-69	EC-5	S.J.C.
5	10-3-69	24-10F	J.C.
4	8-19-69	24-10	S.J.C.
3	11-7-69	EC-4	F.J.L.
2	9-17-69	24-6	J.L.
1	7-10-68		S.G.
13	11-7-74	24-29	F.T.
12	1-16-73	24-256	R.B.
11	9-13-71	24-141	S.K.

APPROVED
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PAVING, UTILITIES, FOUNDATIONS

TITLE: SUB-GRADE PLAN-ZONE 'J'
SUB-LEVEL 2-EL [274]

DRAWN	W.F.M.	CHECKED	F.A.S.
SCALE	1/8" = 1'-0"	DATE	5-15-68
FIELD BOOK		SHEET	OF
DRAWING NUMBER	P-J-9		

MATCH LINE — N 4735.00
FOR CONTINUATION SEE DWG. P-J-9

TOWER "A"
FOR PIPING WITHIN TOWER SEE DWG. P-A-

STAIR K-1

UPPER LEVEL OF REFRIGERATION ROOM
EL. 257'-0"

UPPER PART OF TOILETS & LOCKERS
EL. 268'-6"

UPPER PART OF CONTROL ROOM
EL. 269'-6"

VISITORS GALLERY

UPPER LEVEL OF SWITCHGEAR ROOM
EL. 264'-0"

TENANT STORAGE
EL. 274'-0"

RAMP "J" UP TO EL. 284'-0"

PARKING AREA
EL. 274'-0"

RAMP "V" DOWN TO EL. 274'-0"

SOUTH PROJECTION

TOWER "B"
EL. 274
FOR PIPING WITHIN TOWER SEE DWG. P-B-6

STAIR K-4

STAIR K-5

STAIR K-6

STAIR K-7

STAIR K-3

SHAFT #6

SHAFT #7

SHAFT #8

SHAFT #9

SHAFT #10

UPPER PART OF FL. 284' LEVEL

UPPER PART OF LAN SUPPORT AREA FOR PIPING IN THIS AREA SEE PART PLAN ON DWG. P-K-21

KEY PLAN

NOTES:
1. FOR GENERAL NOTES & SYMBOLS SEE DWG. P-X-27
2. ALL STANDPIPE DRY STANDPIPE, PROVIDE (2) TWO 2½" HOSE VALVES, 5'-0" MIN ABOVE FLOOR.

NO.	DATE	SUB. NO.	BY
10	10-6-71	SG-173	JS
9	12-7-71	SG-118	BJC
8	7-22-70	SG-99	BJC
7	5-11-70	SG-51	JJ
6	3-10-70	SG-30	BJC
5	2-20-70	SG-33	JJ
4	11-19-69	SG-16	BJC
3	8-8-69	SG-10	JC
2	1-30-69	SG-6	JC
1	9-1969	SG-2	JE

REVISIONS

APPROVED
CHIEF, PLANNING DIVISION
DATE

THE WORLD TRADE CENTER
THE PORT OF NEW YORK AUTHORITY

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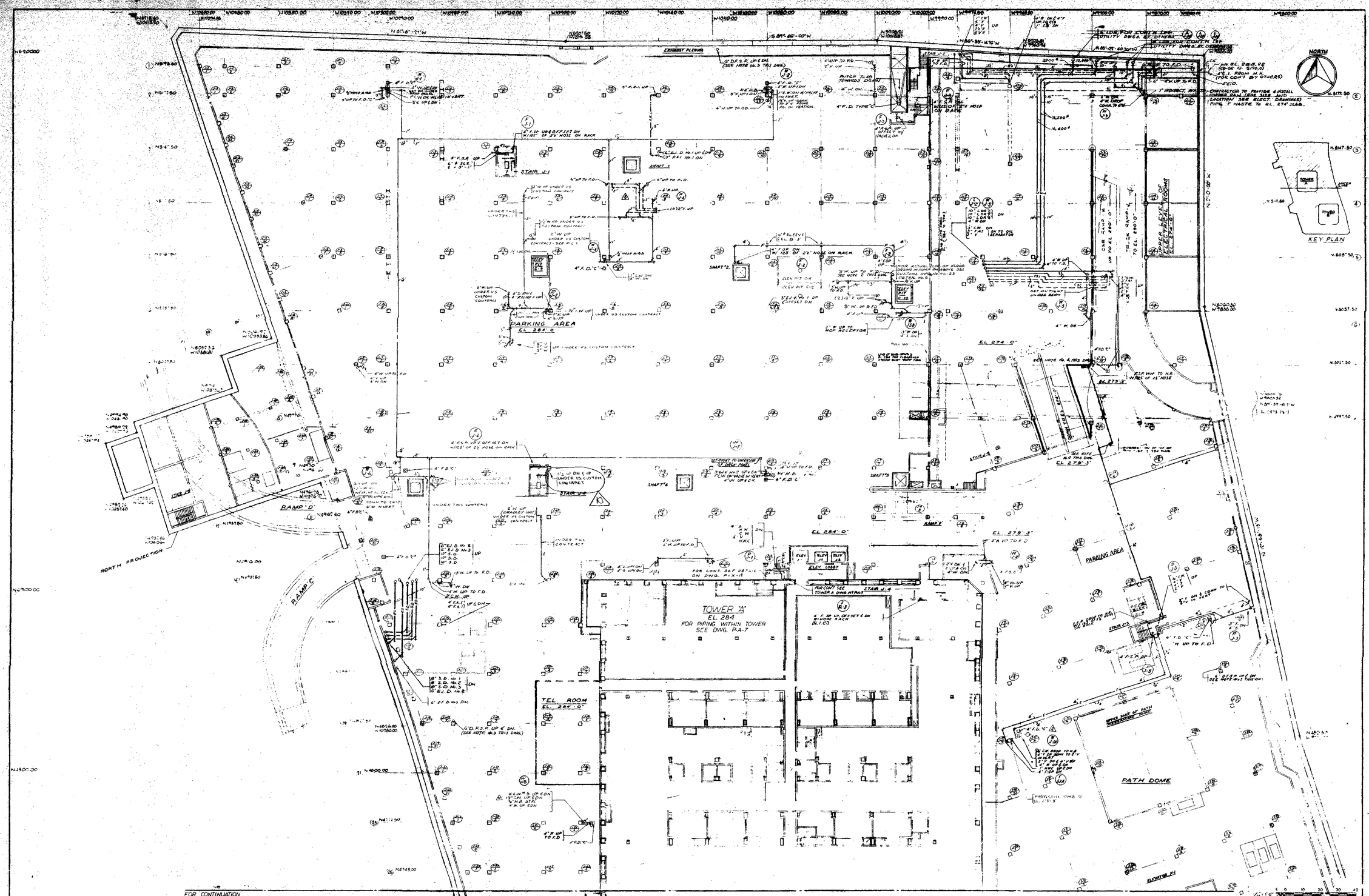
WORTHINGTON, SKILLING, HELLE & JACKSON — STRUCTURAL ENGINEERS
JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS
JAROS, BAUM & BOLLES — MECHANICAL ENGINEERS
THE PORT OF NEW YORK AUTHORITY — PAVING, UTILITIES, FOUNDATIONS

1/16"-1'-0" scale

TITLE: SUBGRADE PLAN-ZONE "K" SUBLEVEL 2-EL. 274

DESIGN	W.F.M.	CHECKED	F.A.S.
DRAWN	JEC & K.K.	DATE	5-15-68
PROJECT NUMBER		SCALE	1/16"
DRAWING NUMBER	P-K-10		



NOTE.
1. FOR GENERAL NOTES & SYMBOLS SEE DWG. P-K-1
2. FOR LOCATIONS OF PENETRATIONS THRU [illegible] SEE P-J-3 & P-K-2, 3, & 5.
3. TEMPORARY C. DRY STANDPIPE - PROVIDE (3) 2½" DRY HOSE VALVES 3'-0" MINIMUM ABOVE FLOOR.
4. INSTALL PIPING AFTER REMOVAL OF EXISTING PATH TUBES.

NO.	DATE	BUL. NO.	BY
10	1-15-73	56-256	RB
9	7-12-71	56-161	DJC
8	3-19-70	56-66	DJC
7	12-19-69	56-16	DJC
6	12-19-69	56-5	DJC
5	12-19-69	56-26	DJC
4	9-19-68	50-10	BV
3	7-20-68	256-6	K.M.
2	9-17-58	56-2	A.F.
1	7-10-68		DJC

REVISIONS

APPROVED

CHIEF, PLANNING DIVISION

DATE

THE WORLD TRADE CENTER

THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES — MINORU YAMASAKI, ARCHITECT
EMERY ROTH & SONS — RICHARD ROTH, ARCHITECT
WORTHINGTON, SKILLING, HELLE & JACKSON — STRUCTURAL ENGINEERS
JAROS, BAUM & BOLLES — MECHANICAL ENGINEERS
JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS
THE PORT OF NEW YORK AUTHORITY — PAVING, UTILITIES, FOUNDATIONS

TITLE: SUB-GRADE PLAN-ZONE J
SUB-LEVEL 1-EL 279-284

DRAWN	J.E.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-1-67
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P.J-11		

TOWER "A"
EL. 284
FOR PIPING WITHIN TOWER
SEE DWG. P-A-7

TOWER "B"
EL. 284
FOR PIPING WITHIN TOWER
SEE DWG. P-B-7

PARKING AREA
EL. 284'-0"

TENANT STORAGE
EL. 284'-0"

RAMP 'A'

RAMP 'B'

RAMP 'K'

RAMP 'L'

STAIR K-6

STAIR K-7

SHAFT 'B'

SHAFT 'C'

SHAFT 'D'

SHAFT 'E'

Note:
FOR PIPING IN THIS AREA & AREAS ABOVE & BELOW
SEE DWG. No. P-1 "CAR POOL PARKING SUB LEVEL-1"

NOTES:
1. FOR GENERAL NOTES & SYMBOLS SEE DWG. P-1-27.
2. PIPING SHOWN DOUBLE LINED IS TENTATIVE. CONTRACTOR SHALL NOT INSTALL UNTIL AUTHORIZED BY THE ENG.'S AUTHORITY.
3. TEMPORARY 6" DEV. STANDPIPE RECEIVING (1) 2½"Ø x 2½" HOSE VALVES 3'-0" MIN. ABOVE FLOOR.

BULLETINS NOT NUMBERED ARE IN PROGRESS

NO.	DATE	SQ. NO.	BY
21	4-16-74	SK-190	F.T.
20	1-11-74	SK-180	SJK
19	7-18-72	SK 223	SJC
18	6-19-72	SK 205	F.T.
17	5-18-72	SK 188	RB
16	5-18-72	SK 208	RB
15	5-18-72	SK 207	RB
14	1-28-72	SK-197	RB
13	10-8-71	SK-193	F.T.
12	9-22-71	SK-168	KA
11	8-17-71	SK 141	LM

REVISIONS

NO.	DATE	SQ. NO.	BY
10	2-27-70	SK-118	F.T.
9	2-20-70	SK 99	SJC
8	2-19-70	SK 51	F.T.
7	2-10-70	SK 50	SJC
6	12-29-69	SK-25	F.T.
5	12-19-69	SK-16	SJC
4	3-31-69	SK-10	J.C.
3	12-20-68	SK-5	EU
2	10/5/67	SK-2	J.F.
1	7-10-67		J.C.

REVISIONS

APPROVED
CHIEF, PLANNING DIVISION
DATE

THE WORLD TRADE CENTER
THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES MINORU YAMASAKI, ARCHITECT	EMERY ROTH & SONS RICHARD ROTH, ARCHITECT
WORTHINGTON, SKILLING, HELLE & JACKSON STRUCTURAL ENGINEERS	JAROS, BAUM & BOLLES MECHANICAL ENGINEERS
JOSEPH R. LORING & ASSOCIATES ELECTRICAL ENGINEERS	THE PORT OF NEW YORK AUTHORITY PAVING, UTILITIES, FOUNDATIONS

TITLE: SUB-GRADE PLAN-ZONE 'K'
SUB-LEVEL 1-EL 279-3 284

SCALE	1/8"=1'-0"	DATE	5-15-68
DRAWING NO.	P-K-12		

MATCH LINE N 47780.00
FOR CONTINUATION
SEE DWG. P-J-11

TOWER "A"
EL. 284
FOR PIPING WITHIN TOWER
SEE DWG. P-A-7

RAMP "B"

RAMP "A"

PARKING AREA
EL. 284'-0"

PARKING AREA "1"

ESCALATOR #1 & #2

STAIR #10

RAMP "C"
ON TO EL. 274'-0"

RAMP "D"
ON TO EL. 274'-0"

RAMP "E"
ON TO EL. 274'-0"

RAMP "F"
ON TO EL. 274'-0"

RAMP "G"
ON TO EL. 274'-0"

RAMP "H"
ON TO EL. 274'-0"

RAMP "I"
ON TO EL. 274'-0"

RAMP "J"
ON TO EL. 274'-0"

RAMP "K"
ON TO EL. 274'-0"

RAMP "L"

RAMP ABOVE

GARAGE EXHAUST PLENUM

TRUCK EXHAUST PLENUM

TOWER "B"
EL. 284
FOR PIPING WITHIN TOWER
SEE DWG. P-B-7

STORAGE
EL. 284'-0"

TENANT STORAGE
EL. 284'-0"

PARKING AREA
EL. 284'-0"

STAIR #1

STAIR #2

STAIR #3

STAIR #4

STAIR #5

STAIR #6

STAIR #7

SHAFT #1

SHAFT #2

SHAFT #3

SHAFT #4

SHAFT #5

SHAFT #6

SHAFT #7

SHAFT #8

SHAFT #9

SHAFT #10

SOUTH PROJECTION

NOTE: ALL CROSS HATCHED EXISTING PIPING TO BE DELETED.

BREAK INTO EXIST. 4"W STACK CONN. 4"W IN VERT.

NOTE: THIS DWG. SUPERSEDES DWG. P-K-12

BULLETINS NOT NUMBERED ARE IN PROGRESS

NO.	DATE	REVISIONS	BY
2	4-19-74	4C-290	J.I.
1	9-12-73	54-	S.J.G.

APPROVED

CHIEF, PLANNING DIVISION

DATE

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THE PORT OF NEW YORK AUTHORITY

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MINORU YAMASAKI, ARCHITECT

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THE PORT OF NEW YORK AUTHORITY
PAVING, UTILITIES, FOUNDATIONS

TITLE: SUB-GRADE PLAN-ZONE "K"
SUB-LEVEL 1-EL 279-3 284

DRAWN	J.E.	CHECKED	F.A.S.
SCALE	1/8" = 1'-0"	DATE	5-15-68
PROJECT NUMBER	W.T.C. 531.00	SHEET	OF
DRAWING NUMBER	P-K-12-II		

UNITED STATES CUSTOMS BLDG AREA

TOWER "A"
EL. 294
FOR PIPING WITHIN TOWER
SEE DWG. P-A-8

TRUCK DOCK & LOADING AREA
EL 290'-0"

LOADING DOCK
EL 294'-0"

UTILITY RACK
FOR PIPING OF UTILITY RACK SEE DWG P-K-15

KEY PLAN

DETAIL No. 1
No Scale

NOTES:
1. FOR GENERAL NOTES AND SYMBOLS SEE DRAWING No P-K-23
2. FOR CONT OF PIPING AT UTILITY RACK SEE 1/8" SCALE PLAN OF UTILITY RACK DWG P-K-15
3. ALL LINES INDICATED GOING UP & NALL TERMINATE THROUGH THE SIDE SLAB. WE APPROPRIATE FITTINGS (FOR CONTINUATION UNDER ANOTHER CONTRACT UNLESS OTHERWISE NOTED
4. FOR ACTUAL LOCATIONS OF ALL FLOOR DRAINS SEE U.S. CUSTOM BLDG. CONTRACT DWGS. (P-C-3-3-4-5).
5. DRAINAGE PIPING TO BE SCHED. 40 GALVANIZED STEEL
6. THE 8" SPRINKLER MAIN INDICATED ON THIS PLAN WILL BE INSTALLED UNDER ANOTHER CONTRACT AND IS SHOWN ONLY TO ASSIST IN LOCATING THE TWO 6" FDC RISERS CONNECTING MAIN SITE FIRE EXTINGUISHING SYSTEM CONNECTIONS. FOR FURTHER COORDINATION SEE SPRINKLER DWGS.

ALL BULL NOT DATED ARE IN THE PROCESS OF COMPEATION.

NO.	DATE	WELL NO.	BY
16	9-22-70	56-262	RB
15	2-18-70	56-201	JA
14	11-13-69	56-185	RB
13	12-2-71	56-190	FL
12	7-12-71	56-163	SJC
11	9-12-71	56-192	SJC

REVISIONS

NO.	DATE	BUL. NO.	BY
10	7-12-71	56-161	DC
9	3-20-70	56-66	SJC
8	12-19-69	56-36	TJF
7	10-16-69	56-16	SJC
6	10-16-69	56-5	SJC
5	10-10-69	56-18	JC
4	3-18-69	56-3	JC
3	1-1-69	56-6	KJ
2	7-1-68	56-4	JC
1	7-1-68	56-1	JC

REVISIONS

APPROVED

CHIEF, PLANNING DIVISION

DATE

THE WORLD TRADE CENTER

THE PORT OF NEW YORK AUTHORITY

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EMERY ROTH & SONS
RICHARD ROTH, ARCHITECT

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JAROS, BAUM & BOLLES
MECHANICAL ENGINEERS

JOSEPH R. LORING & ASSOCIATES
ELECTRICAL ENGINEERS

THE PORT OF NEW YORK AUTHORITY
PAVING, UTILITIES, FOUNDATIONS

TITLE: SUB GRADE PLAN ZONE "J"
SUB-LEVEL -EL 290-294

DRAWN	P.J.T.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-J-13		

1/16" = 1'-0" SCALE
0 5 10 20 30 40 feet

TOWER "A"

TOWER "B"
EL. 294'
FOR PIPING WITHIN TOWER
SEE DWG. P-B-B

PARKING AREA
EL. 280'-0"

RAMP "M"
UP TO EL. 304'-3"

RAMP "N"
UP TO EL. 294'-0"

UNASSIGNED AREA No. 3

UNASSIGNED AREA 2
INTRUDED DRAIN PIPING KEEP CLEAR OF POSSIBLE FUTURE DUCTS.

TRUCK CIRCULATION AREA

KEY PLAN

PLAN ELEV. 310'-0
SCALE 1/4"=1'0"

PLAN ELEV. 294'-0"
SCALE 1/4"=1'0"

NOTE:
1. FOR GENERAL NOTES & SYMBOLS SEE DWG. P-A-1.
2. FOR CONT. OF PIPING AT UTILITY RACK SEE "B" SCALE PLAN OF UTILITY RACK DWG P-B-15

3. PLAZA STAIR DRAINS SHALL BE ZURN INDUCINE "ZEN-615" "P" MAB CAST IRON BODY, WITH SEDIMENT PAIL, BIRD ENDLESS, AND CLAMPING COLLAR, BOTTOM OUTLET, 4" HUB & SPIGOT, MODIFIED WITH TYPE "U" EXTENSION AND 6" DIA. TYPE "M" DOMED ADJUSTABLE TOP WITH VENT-EQUIP. ZURN FLAMME GRATE. THIS CONTRACTOR SHALL PROVIDE STYROFOAM COLLAR, OR OTHER SUITABLE MATERIAL, AS REQUIRED AT TIME OF INSTALLATION OF THE SINKS. THIS CONTRACTOR SHALL REMOVE THE STYROFOAM COLLAR AND THE TYPE "M" TOP AND RE-USE IT WITH 24" LONG (NOMINAL TYPE "U" EXTENSION, AS A 5" DIA. TYPE "P" NICKEL BRONZE HOUSE STRAINER TOP WITH NICKEL HEAVY DUTY GRATE, SECURED WITH SPANNER TYPE TAMPER PROOF SCREWS.

4. THE 8" SPRINKLER MAIN INDICATED ON THIS PLAN WILL BE INSTALLED UNDER ANOTHER CONTRACT AND IS SHOWN FOR CLEARANCE AS AN INDICATION FOR THE FIRE & SPRINKLER TRADES CONNECTIONS MAIN WITH THEIR SUNKEN CONNECTIONS. FOR FURTHER COORDINATION SEE SPRINKLER DWGS.

5. DRAINAGE PIPING TO BE SCHED. 40 GALVANIZED STEEL

20	5-18-72	SG-207	RB	10	7-27-70	SG-39	SJC				
19	5-18-71	SG-191	SJC	9	5-11-70	SG-21	JL				
18	1-18-71	SG-196	SJC	8	3-20-70	SG-50	SJC				
17	1-18-71	SG-145	RB	7	12-19-69	SG-34	JL				
16	12-17-70	SG-179	JL	6	12-19-69	SG-25	JL				
15	10-6-70	SG-173	JL	5	10-10-69	SG-18	JC				
14	8-17-70	SG-181	JL	4	5-2-69	JL					
13	7-27-70	SG-165	SJC	3	1-15-69	SG-16	JL				
12	7-17-70	SG-188	RB	2	9-11-68	SG-1	JL				
11	10-5-70	SG-114	SJC	1	7-16-68						
NO.	DATE	GUEST SUR. NO.	BY	NO.	DATE	GUEST SUR. NO.	BY				
REVISIONS				REVISIONS							

APPROVED
CHIEF, PLANNING DIVISION
DATE

THE WORLD TRADE CENTER
THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES
MINORU YAMASAKI, ARCHITECT

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JAROS, BAUM & BOLLES
MECHANICAL ENGINEERS

JOSEPH R. LORING & ASSOCIATES
ELECTRICAL ENGINEERS

THE PORT OF NEW YORK AUTHORITY
PAVING, UTILITIES, FOUNDATIONS

TITLE
SUB-GRADE PLAN-ZONE K
SUB-LEVEL-EL 294

DRAWN	P.J.T.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-15-68
FILE NO.		APPROVED	
CONTRACT NO.			

P-K-14

TOWER 'A'

RAMP 'B'

RAMP 'A'

RAMP 'N'
UP TO EL. 304'-5"

RAMP 'H'

TRUCK CIRCULATION AREA

PARKING AREA
EL. 290'-0"

TOWER 'B'
EL. 294
FOR PIPING WITHIN TOWER
SEE DWG. P-B-8

RAMP 'V'

PARKING AREA

LOADING PLATFORM'S

UNASSIGNED AREA 2

UNASSIGNED AREA 3

PART PLAN 310' LEVEL

PART PLAN 310' LEVEL

PART PLAN 294 LEVEL
SPRINKLER PIPING SHOWN FOR COORDINATION PURPOSES ONLY (NIC)

ANTI FREEZE WALL HYDRANT SHALL BE ZURN MODEL No. Z-1310

NOTE: THIS DWG. SUPERSEDES DWG. P-K-14

NORTH

SOUTH METER ROOM
SEE DWG. P-K-13

NO.	DATE	REVISIONS	BY
	56-9-22-18		GJC
	56-11-14		J.T.

APPROVED
CHIEF, PLANNING DIVISION
DATE

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PAVING, UTILITIES, FOUNDATIONS

TITLE
SUB-GRADE PLAN-ZONE 'K'
SUBLEVEL-EL. 294'

DESIGNED	PJT
DETAILED	
TRACED	
CHECKED	W.T.C. SUB-GRADE
APPROVED	

DRAWING NO. P-K-1

RAMP J

RAMP G

CONTROL BOOTH

NORTH

CORRIDOR

TENANT STORAGE
TOP OF SLAB EL. 294'-0"

STEAM VALVE ROOM
TOP OF SLAB EL. 294'-0"

METER ROOM

LOADING PLATFORM EL. 294'-0"

TOWER B
TOP OF SLAB EL. 294'-0"

NOTES

1- ALL DIMENSIONS SHOWN TO SLURRY WALL ARE BASED ON NOMINAL DESIGN LOCATION OF WALL. ACTUAL FIELD POSITION OF SLURRY WALL MAY VARY WHICH WILL AFFECT CLEAR DIMENSION OF UTILITY RACK.

2- FOR DETAILS OF SPLICE CHAMBERS SEE DWG. # E0-6K Sh II, CON EDISON CO.

3- FOR DIMENSIONS AND LOCATION OF PANELS SEE DWG P-X-8

4- FOR GENERAL NOTES & SYMBOLS SEE DWG P-X-27

5- FOR CONT'N OF ALL LINES BEYOND UTILITY RACK WALL SEE DWGS SP-J-18, SP-K-20, P-J-13, P-K-14

6- FOR CONDUITED SEE ELECTRICAL CONDUIT DWG'S

7- FOR C.W. SADDLES & INSULATION REFER TO SPECS FOR USE ON SUPPORTS

8- SUPPORTS TO BE LOCATED A MINIMUM OF 3'-0" ON CENTERS OR A MAXIMUM OF (2) TWO PER 10 KIPS ON SPAN.

9- FOR DETAILS & SECTIONS OF PIPING SEE DWG P-X-16, P-X-17

1/8"=1'-0" scale 0 5 10 15 20 feet

REVISIONS					
NO.	DATE	SUB. NO.	BY	DATE	SUB. NO.	BY
				1-10-69	56-G	E.A.S.
				1-20-68		E.A.S.

APPROVED

CHIEF, PLANNING DIVISION

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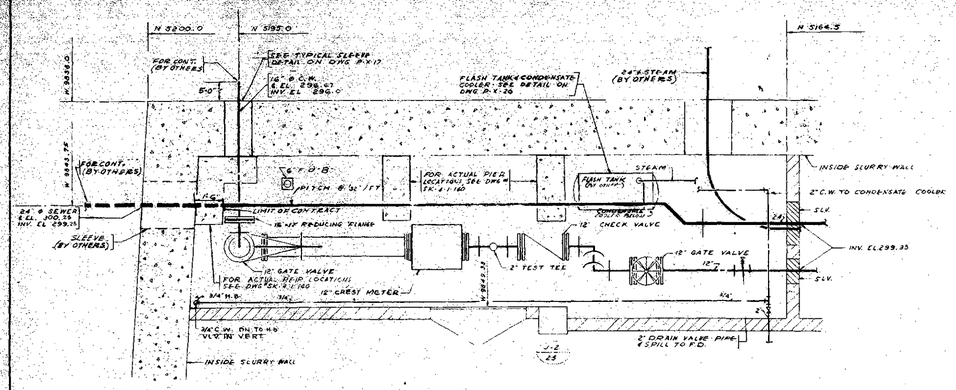
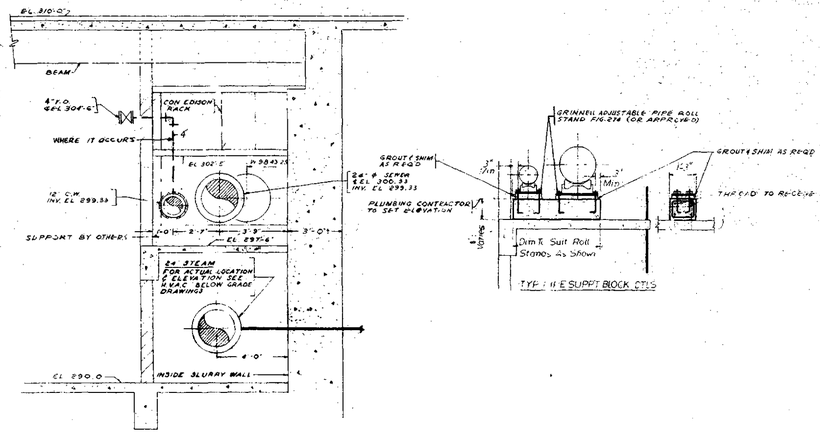
WORTHINGTON, SKILLING, HELLE & JACKSON STRUCTURAL ENGINEERS	JAROS, BAUM & BOLLES MECHANICAL ENGINEERS
JOSEPH R. LORING & ASSOCIATES ELECTRICAL ENGINEERS	THE PORT OF NEW YORK AUTHORITY PAVING, UTILITIES, FOUNDATIONS

TITLE: UTILITY RACK
EL. 290'-294'

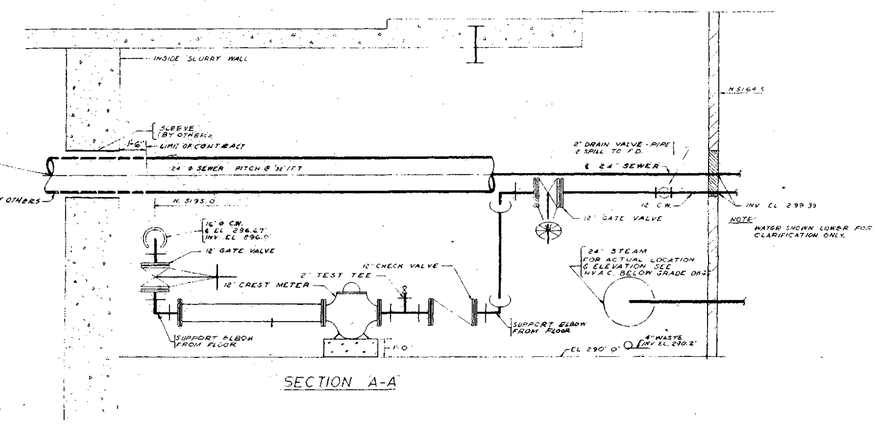
DRAWN	W.F.M.	CHECKED	E.A.S.
SCALE	1/8"=1'-0"	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-15		



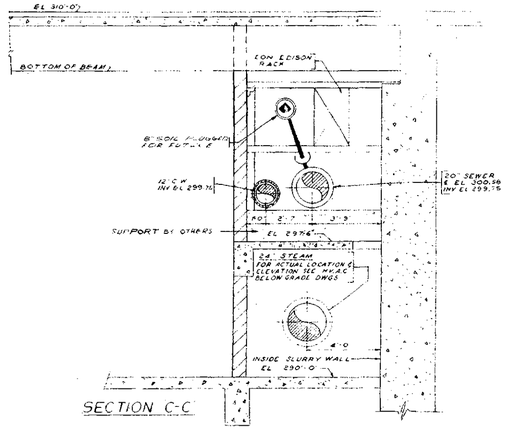
NORTH METER ROOM



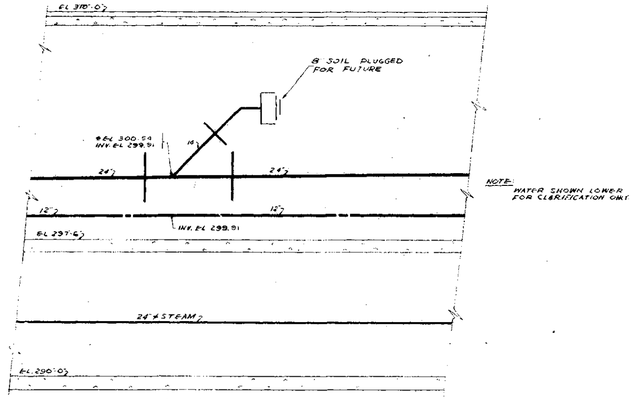
SECTION B-B



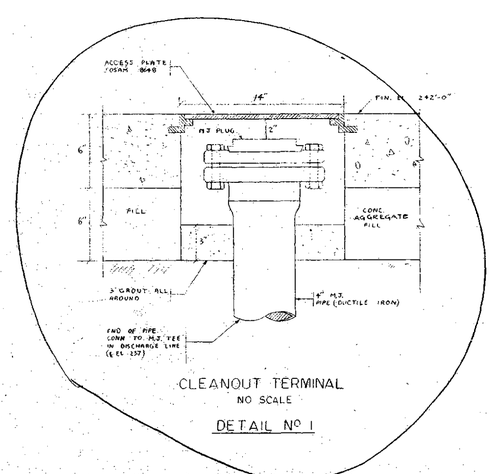
SECTION A-A



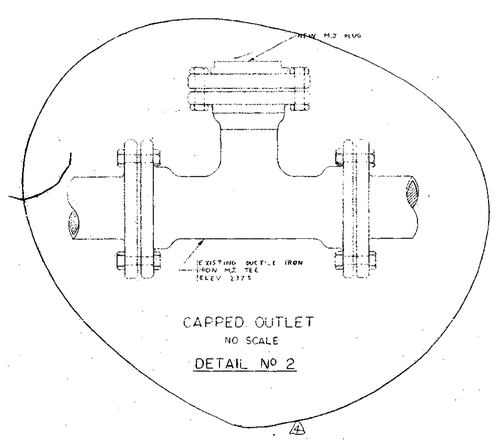
SECTION C-C



SECTION D-D



CLEANOUT TERMINAL
NO SCALE
DETAIL NO 1



CAPPED OUTLET
NO SCALE
DETAIL NO 2

NOTE
1. FOR GENERAL NOTES & SYMBOLS SEE DWG ∇ P-X-1.
2. CONCRETE SUPPORTS, PIERS, TO BE BY OTHERS.
3. 1" INSULATION ON C.W.
4. FOR LOCATION OF SECTIONS SEE P-X-10.

NO.	DATE	BUL. NO.	BY
4	10-1372		RB
3	1-2068	56-6	J.C.
2	9-1748	53-2	A.F.
1	7-10-68		E.R.

REVISIONS

APPROVED

CHIEF, PLANNING DIVISION

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THE PORT OF NEW YORK AUTHORITY

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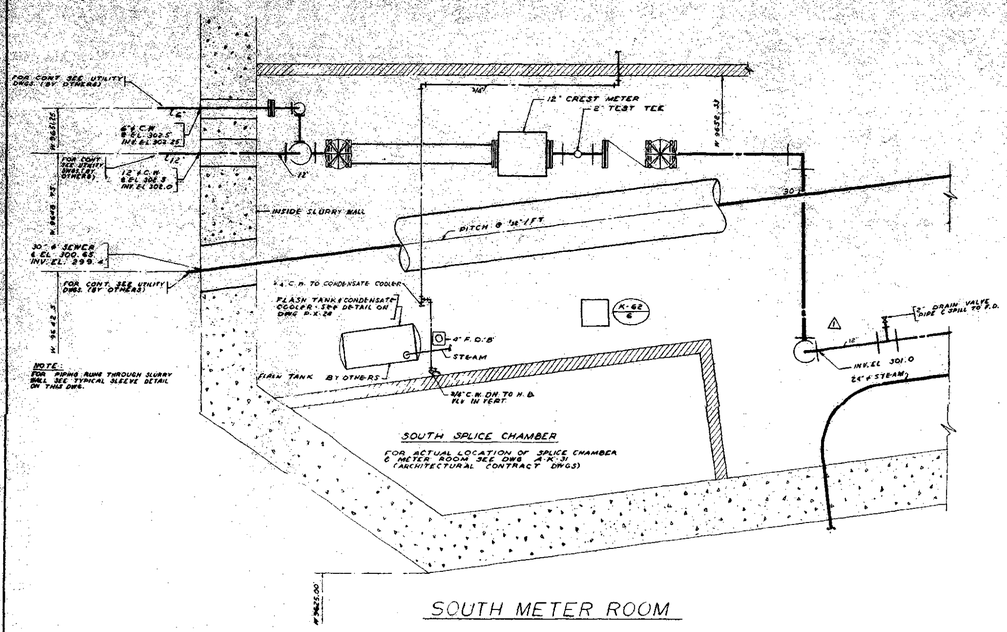
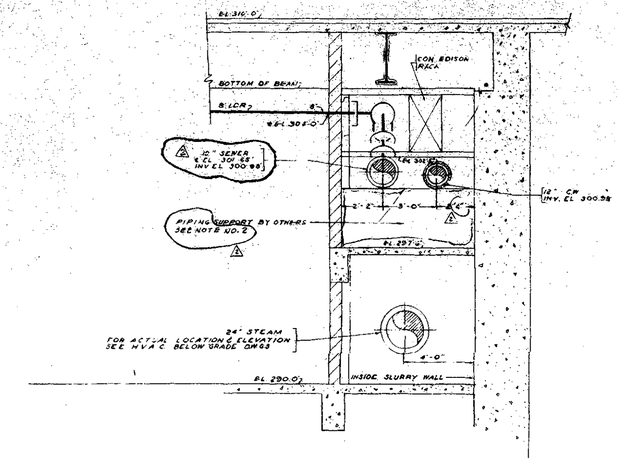
THE PORT OF NEW YORK AUTHORITY — PAVING, UTILITIES, FOUNDATIONS

TITLE: DETAIL SHEET No. 1

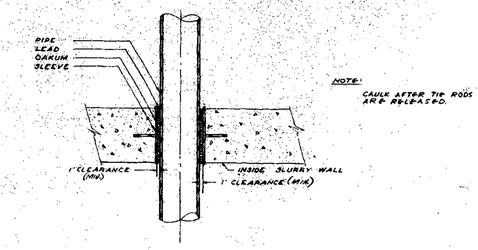
DRAWN	W.F.M	CHECKED	F.A.S.
SCALE	NONE	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-16		



SOUTH METER ROOM

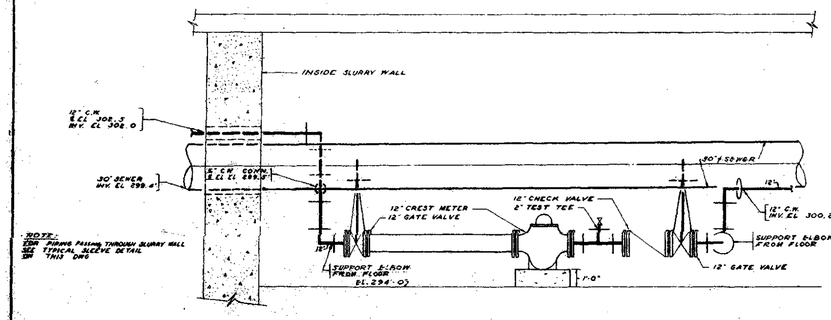


SECTION F-F

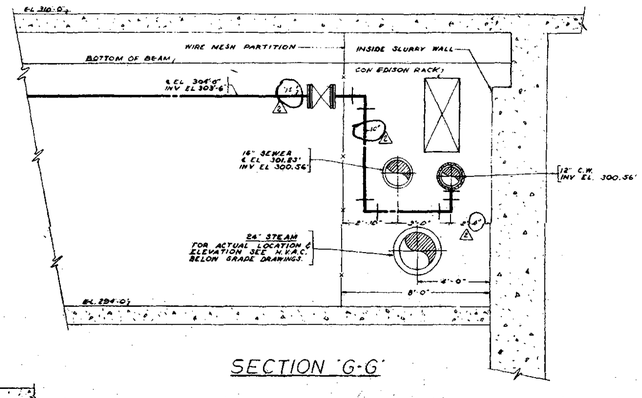


TYPICAL SLEEVE DETAIL

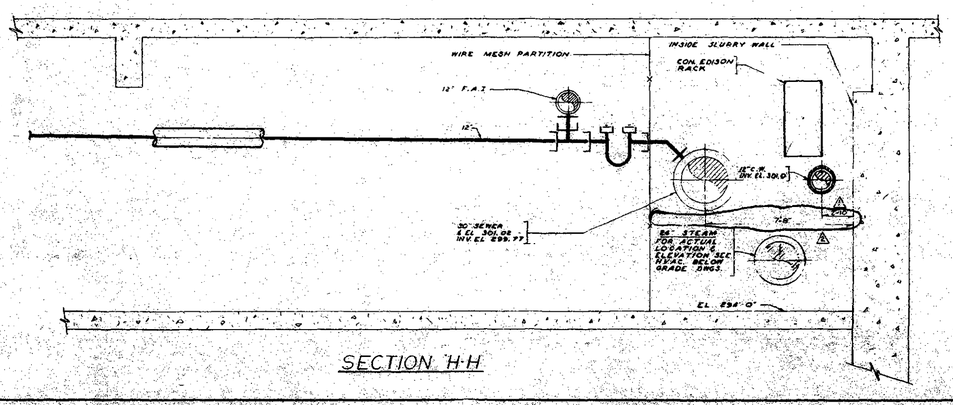
NO SCALE



SECTION J-J



SECTION G-G



SECTION H-H

NOTES:

1. FOR GENERAL NOTES & SYMBOLS SEE DWG # P-X-27
2. FOR SUPPORTS OF SEWER & WATER LINES SEE STRUCTURAL DRAWINGS
3. 1 INSULATION ON C.W.
4. FOR LOCATION OF SECTIONS SEE P-X-16.

NO.	DATE	SUB. NO.	BY
2	1-2-69	SG-6	E.M.
1	10-68		J.E.

REVISIONS

APPROVED

CHIEF, PLANNING DIVISION

DATE

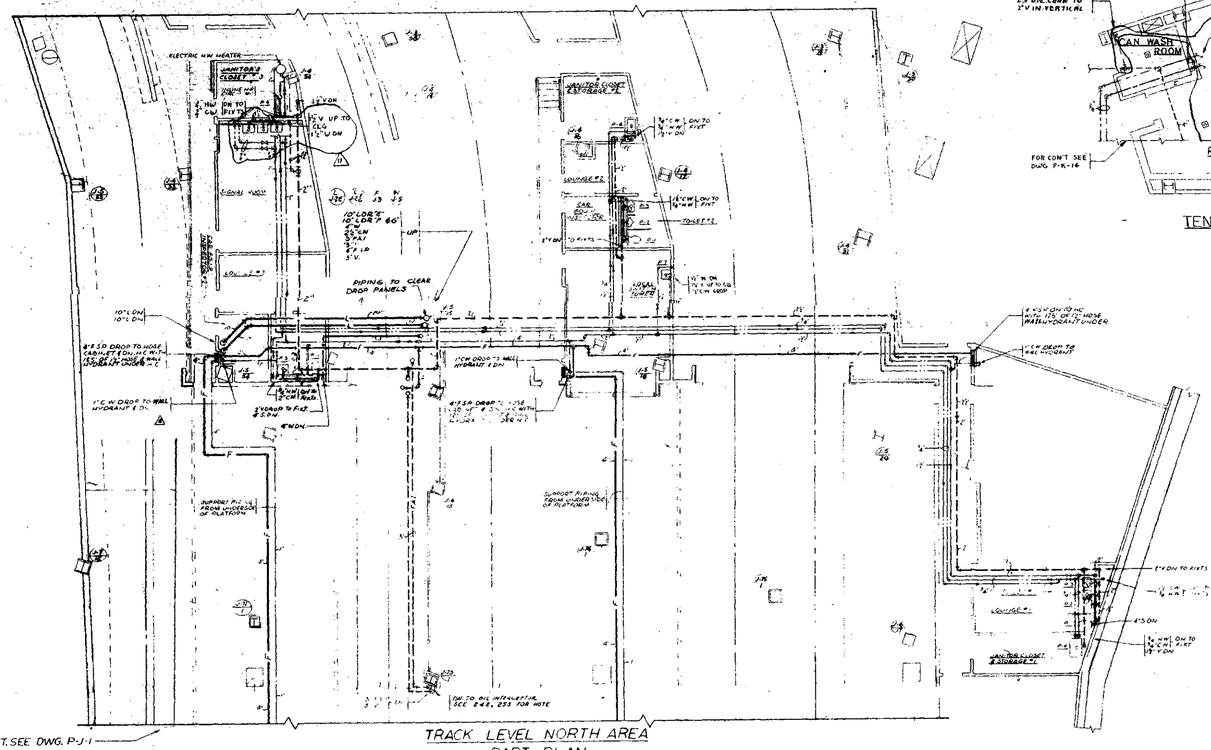
THE WORLD TRADE CENTER

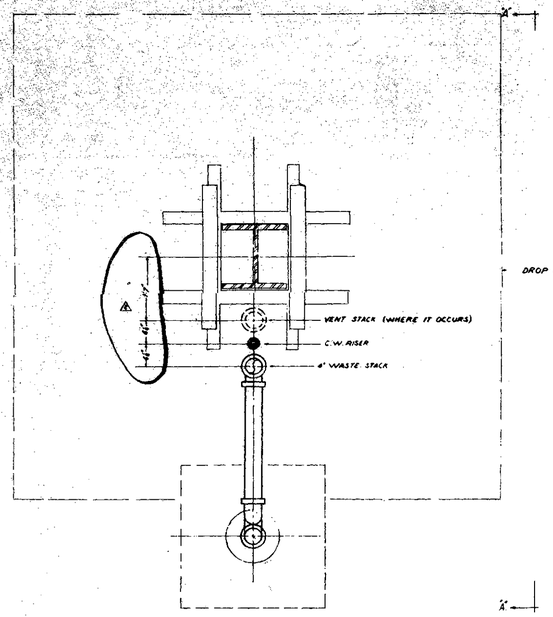
THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES — MINORU YAMASAKI, ARCHITECT
EMERY ROTH & SONS — RICHARD ROTH, ARCHITECT
WORTHINGTON, SKILLING, HELLE & JACKSON — STRUCTURAL ENGINEERS
JAROS, BAUM & BOLLES — MECHANICAL ENGINEERS
JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS
THE PORT OF NEW YORK AUTHORITY — PAVING, UTILITIES, FOUNDATIONS

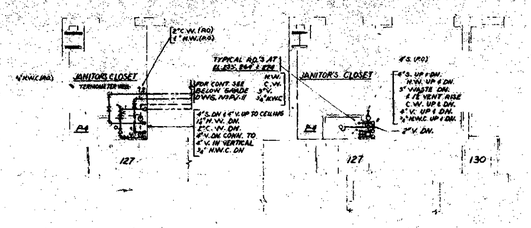
TITLE: DETAIL SHEET No. 2

DRAWN	W.F.M.	CHECKED	F.A.S.
SCALE	NONE	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-17		


ELECTRIC HW HEATER
JANITORS CLOSET
JANITORS CLOSET & STORAGE #7
TOILET #2
LOCAL TOILETS
PIPING TO CLEAR DROP PANELS
8"ø S.D. DROP TO HOSE CABINET & D.H. C WITH 1½" HOSE & WALL HYDRANT UNDER
1"C.W. DROP TO WALL HYDRANT & D.H.
SUPPORT PIPING FROM UNDERSIDE OF PLATFORM
LOUNGE #2
LOUNGE #1
SANITARY CLOSET & STORAGE #1
4"S.D. DROP TO WALL HYDRANT & D.H.
4"S.D. DROP TO WALL HYDRANT & D.H.
4"S.D. DROP TO WALL HYDRANT & D.H.
1"C.W. DROP TO WALL HYDRANT & D.H.
4"S.D. DROP TO WALL HYDRANT & D.H.
4"S.D. DROP TO WALL HYDRANT & D.H.
1"C.W. DROP TO WALL HYDRANT & D.H.
4"S.D. DROP TO WALL HYDRANT & D.H.
4"S.D. DROP TO WALL HYDRANT & D.H.
4"S.D

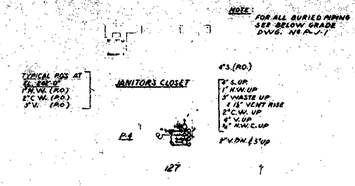


PLAN
DETAIL TYPICAL COLUMNS
4" WASTE STACK - C.W. RISER & VENT STACK
&
LOCATION OF FLOOR DRAIN

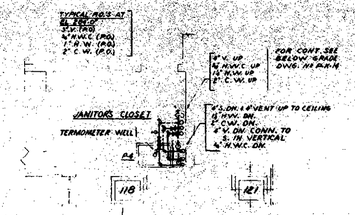


PART PLAN OF MOP RECEPTOR
ZONE 'J' EL. 284'-0"

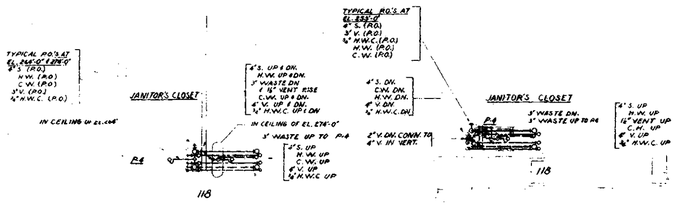
PART PLAN OF MOP RECEPTOR
ZONE 'J' EL. 253'-0", 264'-0" & 274'-0"



PART PLAN OF MOP RECEPTOR
ZONE 'J' EL. 242'-0"

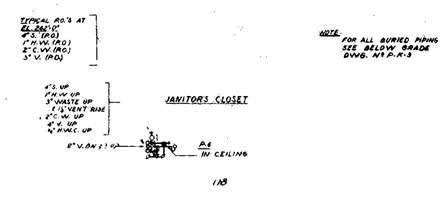


PART PLAN OF MOP RECEPTOR
ZONE 'K' EL. 264'-0"

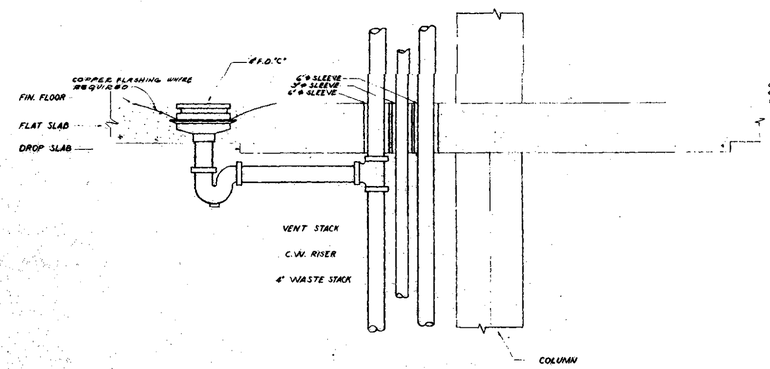


PART PLAN OF MOP RECEPTOR
ZONE 'K' EL. 264'-0" & 274'-0"

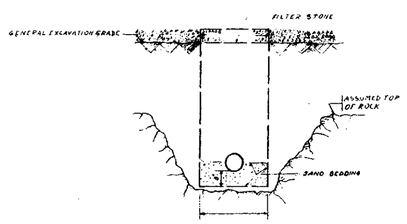
PART PLAN OF MOP RECEPTOR
ZONE 'K' EL. 253'-0"



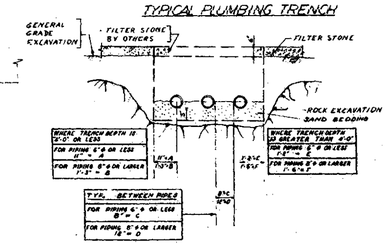
PART PLAN OF MOP RECEPTOR
ZONE 'K' EL. 242'-0"



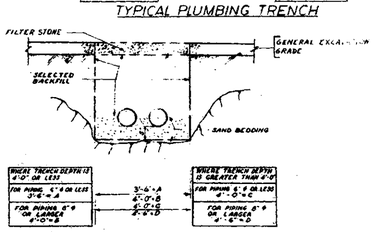
SECTION 'A'-'A'



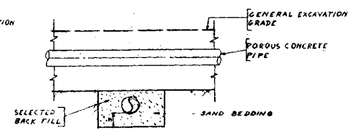
TYPICAL PLUMBING TRENCH



TYPICAL PLUMBING TRENCH
FOR 3 OR MORE PIPES



TYPICAL PLUMBING TRENCH
FOR TWO PIPES



TYPICAL INTERSECTION OF DRAINAGE AND PLUMBING TRENCHES

NOTE:
1. FOR GENERAL NOTES & SYMBOLS SEE DWG P-X-27
2. FOR TRENCHING DETAILS SEE DWGS P-X-30, P-X-31, & P-X-32

NO.	DATE	SUB. NO.	BY
2	1-20-69	56-6	J.C.
1	9-17-68	56-2	JE

REVISIONS

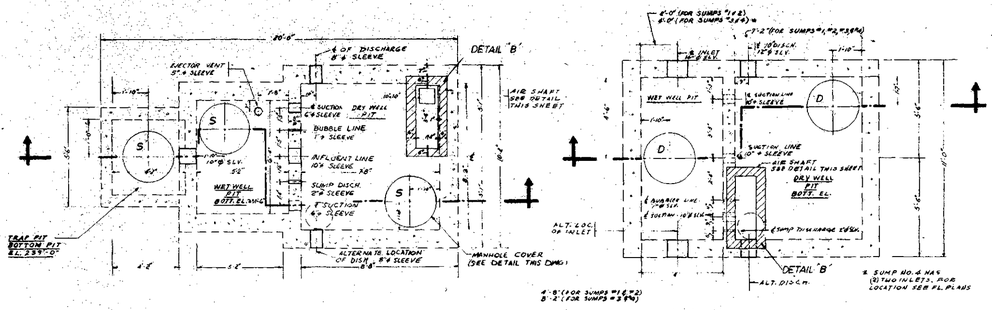
APPROVED
CHIEF, PLANNING DIVISION
DATE

THE WORLD TRADE CENTER
THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES MINORU YAMASAKI, ARCHITECT	EMERY ROTH & SONS RICHARD ROTH, ARCHITECT
WORTHINGTON, SKILLING, HELLE & JACKSON STRUCTURAL ENGINEERS	JAROS, BAUM & BOLLES MECHANICAL ENGINEERS
JOSEPH R. LORING & ASSOCIATES ELECTRICAL ENGINEERS	THE PORT OF NEW YORK AUTHORITY PAVING, UTILITIES, FOUNDATIONS

TITLE: DETAIL SHEET No.4

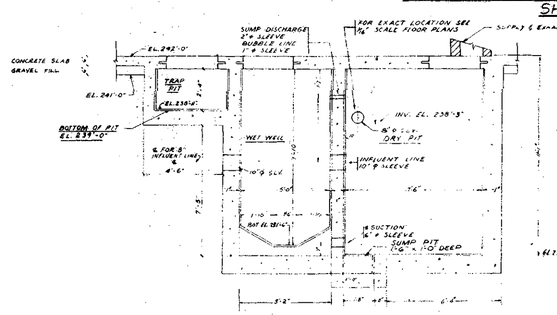
DRAWN	J E	CHECKED	F.A.S.
SCALE	NONE	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-19		



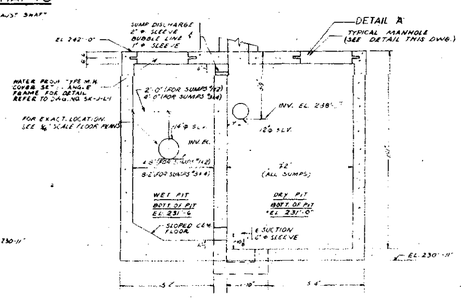
EJECTOR PIT

SUMP PIT

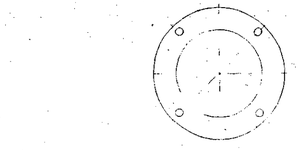
DETAIL OF SLEEVE, MANHOLES & EXHAUST SHAFTS



SECTION
EJECTOR PIT



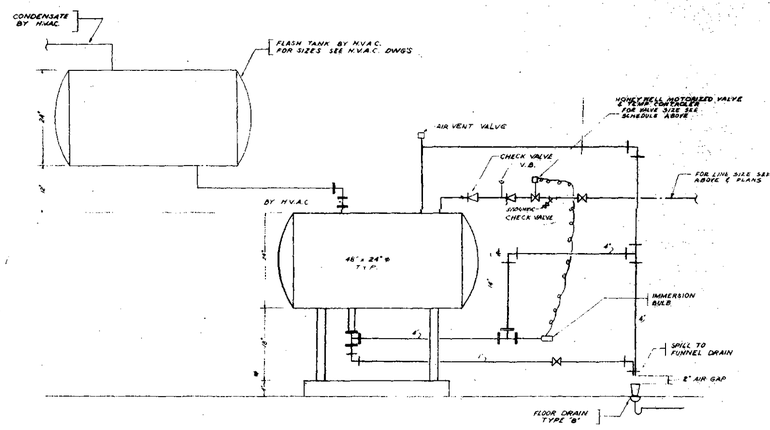
SECTION
SUMP PIT



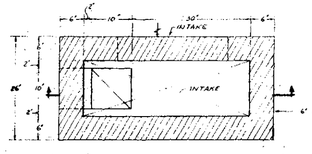
PUMP SUPPORT MOUNTING PLAN

SCHEDULE FOR CONDENSATE TANK WATER VALVE

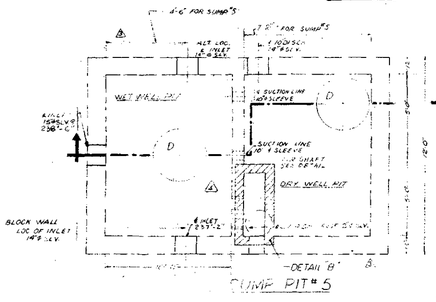
CONDENSATE COOLER	VALVE SIZE	LINE SIZE (INCLUDING ALL OTHER VALVES		@ P.M. R.P.O.	PRESS. DROP
#1	1½"	2"		25	2 PSI.
#2	1"	1½"	—	12	2 PSI.
#3	2"	3"		4	2 PSI.
#4	1"	1½"	—	12	2 PSI.
#5	1½"	1½"		30	2 PSI.



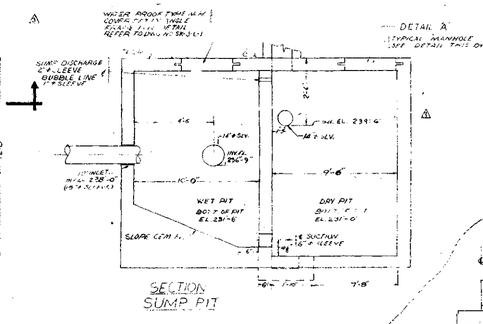
CONDENSATE COOLER DETAIL
(FOR LOCATION & C.W. SIZES SEE FLOOR PLANS)



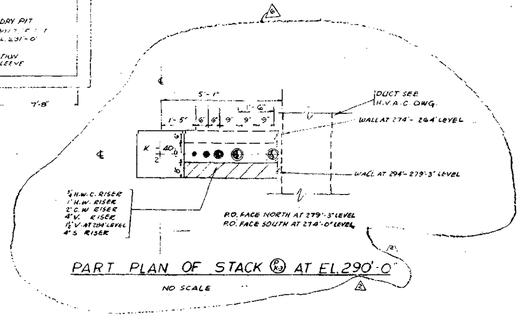
PLAN TYP. SUMP & EJECTOR PIT AIR SHAFT ENCLOSURE



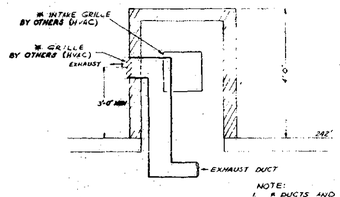
SUMP PIT #5



SECTION
SUMP PIT

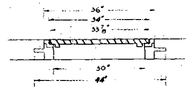


PART PLAN OF STACK Ⓑ AT EL. 290'-0"
NO SCALE



NOTE:
1. 8 DUCTS AND GRILLE BY OTHERS (H.V.A.C.) EXHAUST DUCT BY OTHERS (H.V.A.C.) TO BE CONNECTED TO EXHAUST FAN. EXHAUST FAN BY PLUMBER.

ELEVATION
DETAIL 'B'



ELEVATION OF M.H. FRAME & COVER (BY OTHERS)
(FLOCKHART FOUNDRY CO. TYPE 600 C.E. NO. 62056)

DETAIL 'A'

NOTE:
1. FOR GENERAL NOTES & SYMBOLS SEE DWG. NO. P-X-27

NO.	DATE	REVISIONS	BY
6	5-11-70	SK-51	JJ
5	12-19-69	SK-5	SJC
4	3-19-69	SG-10	BV
3	1-1-69	SG-6	WS
2	9-17-68	SG-2	JE
1	1-10-68		AT

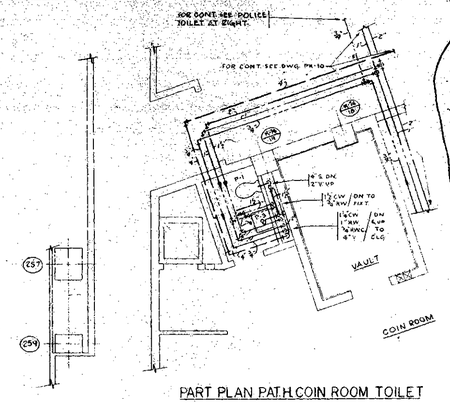
APPROVED
CHIEF, PLANNING DIVISION
DATE

THE WORLD TRADE CENTER
THE PORT OF NEW YORK AUTHORITY

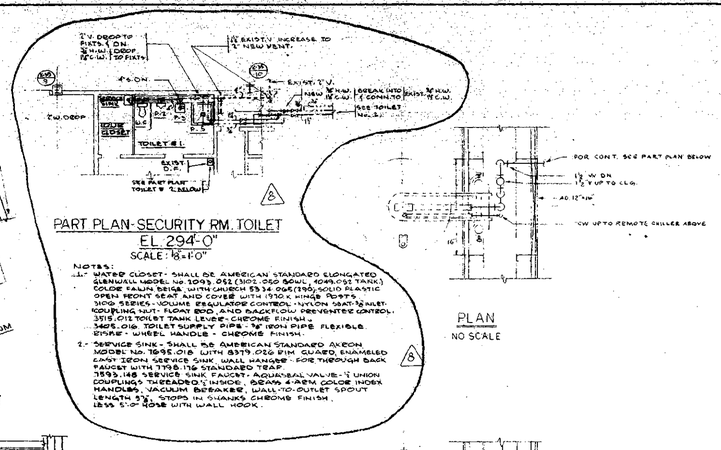
MINORU YAMASAKI & ASSOCIATES — MINORU YAMASAKI, ARCHITECT
EMERY ROTH & SONS — RICHARD ROTH, ARCHITECT
WORTHINGTON, SKILLING, HELLE & JACKSON — STRUCTURAL ENGINEERS
JAROS, BAUM & BOLLES — MECHANICAL ENGINEERS
JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS
THE PORT OF NEW YORK AUTHORITY — PAVING, UTILITIES, FOUNDATIONS

TITLE: DETAIL SHEET No 5

DRAWN	J.E.	CHECKED	F.A.S.
SCALE	NONE	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-20		



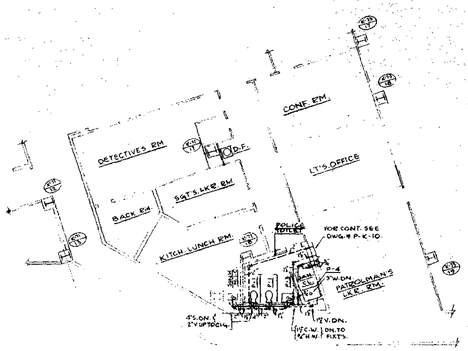
PART PLAN PATH COIN ROOM TOILET
EL. 264'
SCALE 1/4"=1'-0"



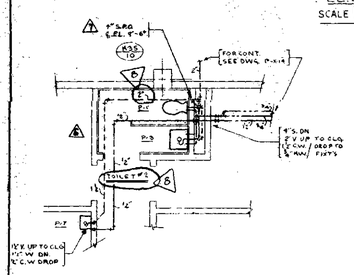
PART PLAN-SECURITY RM. TOILET
EL. 294'-0"
SCALE: 1/8"=1'-0"

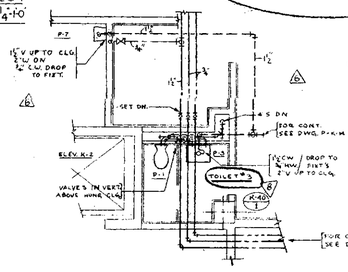
NOTES:
1. WATER CLOSET - SHALL BE AMERICAN STANDARD ELONGATED SUBMUNAL MODEL No. 2093.052 (3015.052 BOWL, 4048.052 TANK) COLOR FAWN BEIGE WITH CHURCH 5334.065 (390) SOLID PLASTIC OPEN FRONT SEAT AND COVER WITH 1950 K HINGE POSTS. 3109 SERIES - VOLUME REGULATOR CONTROL - NYLON SEAT-SS INLET COUPLING NUT - FLOAT BOD. AND BACKFLOW PREVENTER CONTROL. 3315.012 TOILET TANK LEVER - CHROME FINISH. 3409.016 TOILET SUPPLY PIPE - 3/8" IRON PIPE FLEXIBLE. 8194E - WHEEL HANDLE - CHROME FINISH.
2. SERVICE SINK - SHALL BE AMERICAN STANDARD AXON MODEL No. 7858.018 WITH 8379.050 PIN GUARD, ENAMELED CAST IRON SERVICE SINK, WALL HANGER - FOR THROUGH BACK FAUCET WITH 7798.116 STANDARD TRAP. 7595.148 SERVICE SINK FAUCET - AQUASEAL VALVES - 1/2" UNION COUPLING THREADED 1/2" INSIDE BEAM 4 ARM, COLOR INDEX HANDLES, VACUUM BREAKER, WALL TO OUTLET SPOUT LENGTH 3 1/2", STOPS IN SHANKS CHROME FINISH. 1834 5'-0" HOSE WITH WALL HOOK.

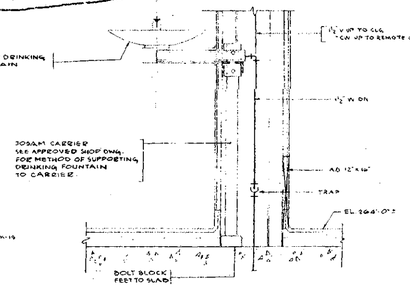
PLAN
NO SCALE



PART PLAN OF POLICE FACILITY TOILET
SCALE 1/8"=1'

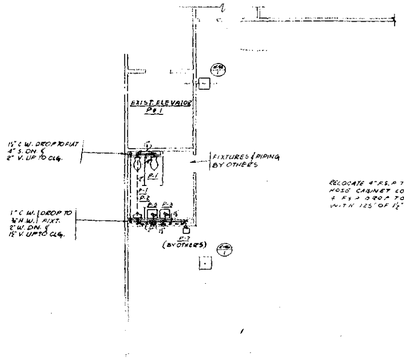




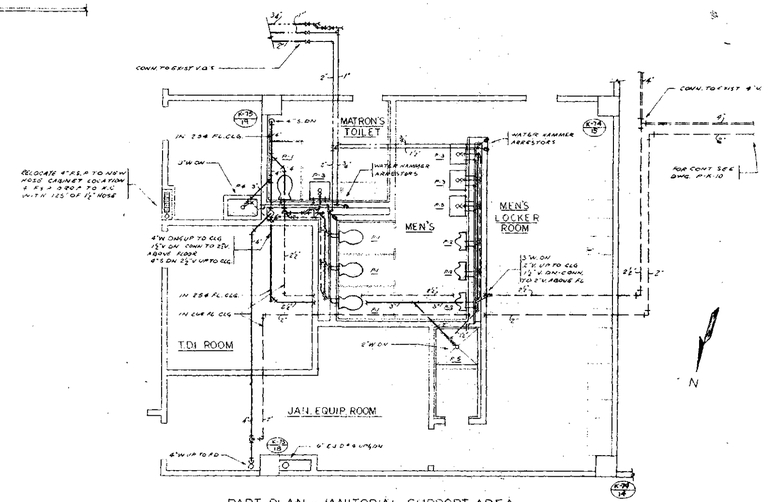


PART PLANS - SECURITY RM. TOILETS
EL. 294'
SCALE 1/4"=1'-0"

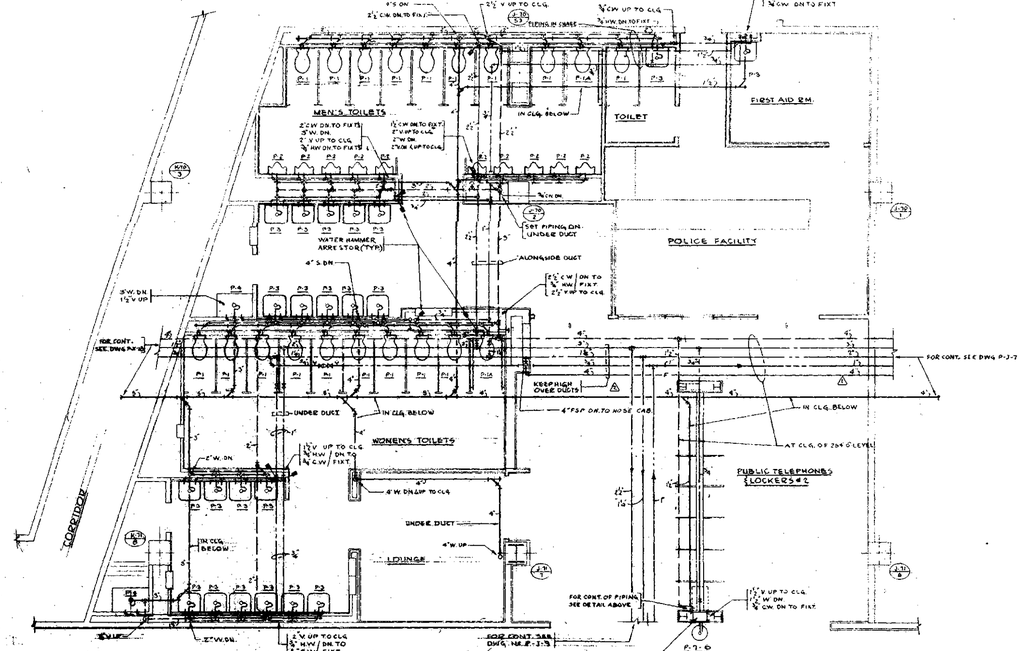
DRINKING FOUNTAIN ELEVATION (P-7-B)
NO SCALE



PART PLAN OF MENS TOILET
SUB GRADE LEVEL EL. 294'-0" (SCALE 1/8"=1'-0")

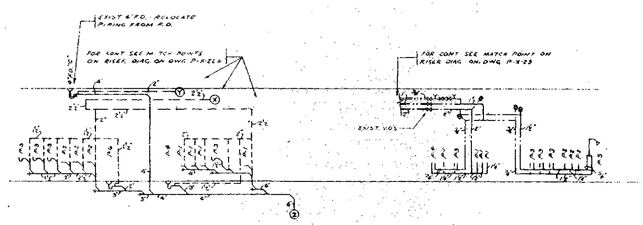


PART PLAN - JANITORIAL SUPPORT AREA
EL. 264'
SCALE 1/4"=1'-0"



PART PLAN P.A.T.H. TOILET
EL. 264'
SCALE 1/4"=1'-0"

NOTE:
1) SPECIFICATION FOR PATH DRINKING FOUNTAIN. DRINKING FOUNTAIN SHALL BE "SUDLER" MODEL NO. 2 STAINLESS STEEL 18" DIAMETER ROUNDED FINISHED WITH CONTOURED BASIN WITH DRAIN AND REMOVABLE (WEDM PLATE) GRID STRAINER WITH ACCESS TO DRAIN LINE. PUSH BOTTON OPERATED AUTOMATIC STREAM REGULATING VALVE. REMOVABLE ACCESS PANEL WITH LOUVERED GRILLE. STAINLESS STEEL BRUSHED FINISHED TO SERVICE COOLING PACK. THE COOLING PACKAGE SHALL BE HOLEY TAYLOR MODEL NO. HEBA, MODIFIED AND SHALL HAVE A MINIMUM CAPACITY OF 10 G.P.H. OF 55° WATER WITH 80°F TEMPERATURE OF 90°F INLET WATER TEMPERATURE OF 80°. HERMETICALLY SEALED COMPRESSOR WITH STARTING CAPACITOR, LIFETIME LUBRICATION, BUILT IN OVERLOAD, PROTECTOR, 110 VOLTS, 60 CYCLE, A.C. SINGLE PHASE, 1/4 HORSE POWER MOTOR, 3-WIRE GROUNDING TYPE LEADS, WALL BOX FOR ROUGHING OF ELECTRICAL AND PLUMBING CONNECTIONS. FINNED TUBE CONDENSER AIR-COOLED SILENT OPERATING FAN AND MOTOR. 5 YEAR GUARANTEE. UL AND CSA APPROVED.



PART SANITARY RISER

PART WATER RISER

NO.	DATE	BUL NO.	BY
8	4-16-74	56-190	J.I.
7	5-10-72	56-218	R.D.
6	5-18-72	56-207	R.B.
5	8-17-71	56-181	L.M.
4	7-27-71	56-168	S.C.
3	10-6-71	56-175	J.I.
2	5-11-70	56-51	J.I.
1	5-29-70	56-53	J.I.

REVISIONS

APPROVED
CHIEF, PLANNING DIVISION
DATE

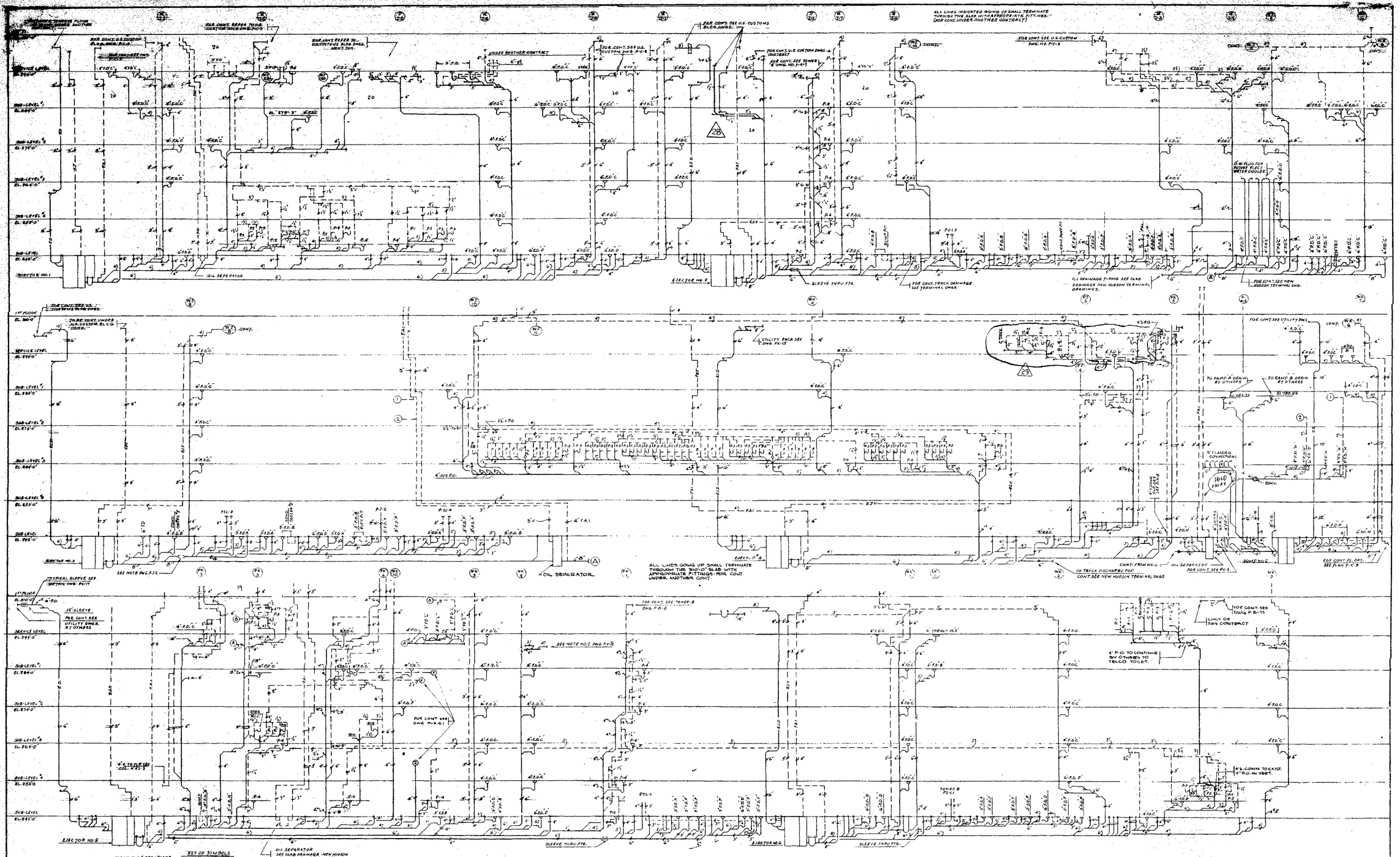
THE WORLD TRADE CENTER
THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES — MINORU YAMASAKI, ARCHITECT
EMERY ROTH & SONS — RICHARD ROTH, ARCHITECT
WORTHINGTON, SKILLING, HELLE & JACKSON — STRUCTURAL ENGINEERS
JAROS, BAUM & BOLLES — MECHANICAL ENGINEERS
JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS
THE PORT OF NEW YORK AUTHORITY — PAVING, UTILITIES, FOUNDATIONS

TITLE: DETAIL SHEET No 6

DRAWN	S.J.C.	CHECKED	F.A.S.
SCALE	AS NOTED	DATE	1-20-69
PROJECT NUMBER		SHEET	2

DRAWING NUMBER: 18-X-2


SERVICE LEVEL EL 346'-0"
SUB-LEVEL 1 EL 326'-0"
SUB-LEVEL 2 EL 314'-0"
SUB-LEVEL 3 EL 294'-0"
SUB-LEVEL 4 EL 282'-0"
SUB-LEVEL 5 EL 262'-0"
EJECTOR NO. 1
1ST FLOOR EL 310'-0"
SERVICE LEVEL EL 296'-0"
SUB-LEVEL 1 EL 284'-0"
SUB-LEVEL 2 EL 274'-0"
SUB-LEVEL 3 EL 264'-0"
SUB-LEVEL 4 EL 253'-0"
SUB-LEVEL 5 EL 242'-0"
EJECTOR NO. 5
OIL SEPERATOR
ELECTOR NO. 6
SLEEVE THRU FTG.
FOR CONT. TRACK DRAINAGE SEE TERMINAL DWGS.
C.I. DRAINAGE PIPING SEE SLAB DRAINAGE NEW HUDSON TERMINAL DRAWINGS.
FOR CONT. SEE NEW HUDSON TERMINAL DWG.
4" M.P. FLUID FOR FUTURE ELEC. WATER COOLER
UNDER ANOTHER CONTRACT
FOR CONT. SEE U.S. CUSTOMS BLDG. DWGS.
FOR CONT. SEE U.S. CUSTOM DWG. P-C-2
FOR CONT. SEE TOWER B DWG. NO. P-A-7
FOR CONT. SEE U.S. CUSTOM DWG. NO. P-C-3
ALL LINES INDICATED GOING UP SHALL TERMINATE THROUGH THE SLAB WITH APPROPRIATE FITTINGS. FOR CONT. UNDER ANOTHER CONTRACT
FOR CONT. SEE UTILITY DWG.
TO PUMP 'A' DRAIN BY OTHERS
TO PUMP 'B' DRAIN BY OTHERS
EL. 288.33
EL. 288.06
SUMP NO. 2
OIL SEPARATOR FOR CONT. SEE P-S-3
FOR CONT. FL. OPS. SEE PLAN P-C-3
CONT. FROM W.P. 6
TO TRUCK DISCHARGE FOR CONT. SEE NEW HUDSON TERMINAL DWGS.
FOR CONT. SEE TOWER B DWG. P-B-8
SEE NOTE NO. 2 DWG. P-X-2
FOR CONT. SEE DWG. P-X-2.1
FOR CONT. SEE DWG. P-B-15
LIMIT OF THIS CONTRACT
4" P.O. TO CONTINUE BY OTHERS TO TELCO TOILET
6" S. CONN. TO EXIST. 6" P.O. IN VAULT.
TOWER B PS-1
PSL-1
PSL-2
PSL-3
PSL-4
PSL-5
PSL-6
PJ-1
PJ-2
PJ-3
PJ-4
PJ-5
PJ-6
PJ-7
PJ-8
PJ-9
PJ-10
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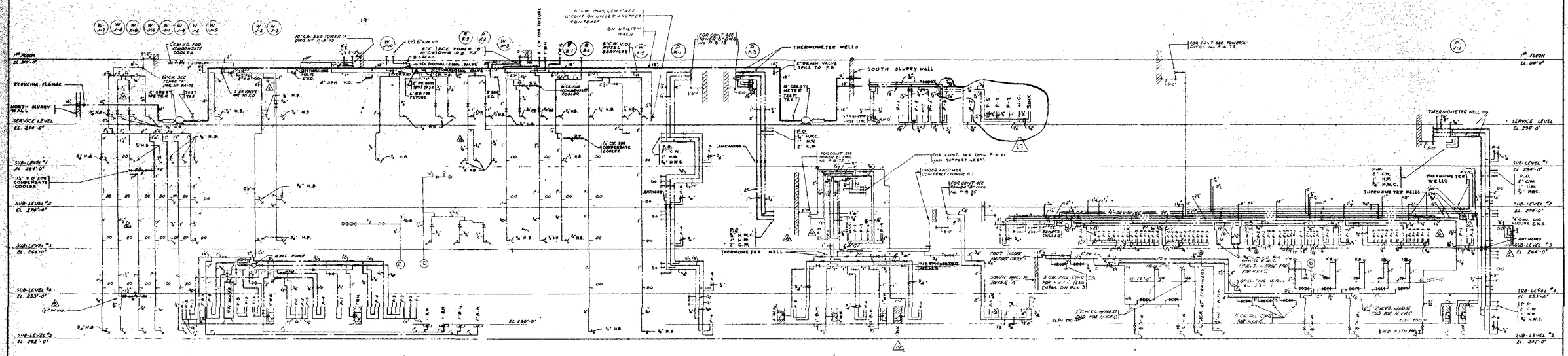
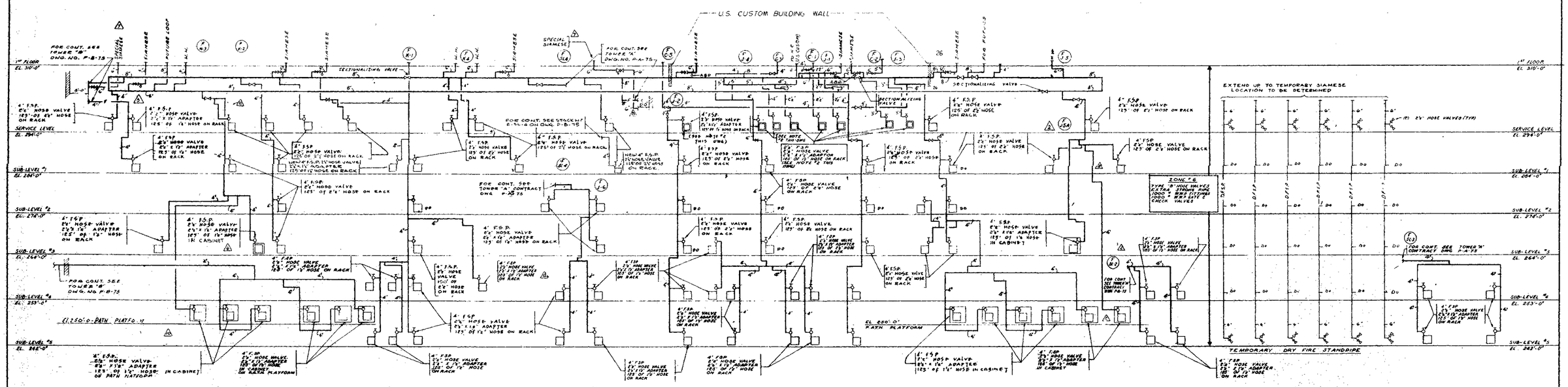
PJ-34
PJ-35
PJ-36
PJ-37
PJ-38
PJ-39
PJ-40



WATER RISER DIAGRAM



FIRE STANDPIPE RISER DIAGRAM

NOTES:
1. FOR GENERAL NOTES & SYMBOLS SEE DWG P-X-27
2. PROVIDE HOSE VALVE FOR FUTURE HOSE RACK (NOT TO BE FURNISHED & INSTALLED UNDER ANOTHER CONTRACT)

NO	DATE	BULL. NO.	BY
21	12-3-71	SG-165	BV
22	5-8-72	SG-207	RB
23	6-8-72	SG-199	RB
24	5-8-72	SG-208	RB
25	6-19-72	SG-295	JJ
26	4-16-74	SG-290	JJ

REVISIONS

NO	DATE	BULL. NO.	BY
20	8-14-74	SG-191	LM
19	7-9-74	SG-189	SJC
18	7-2-74	SG-186	SJC
17	2-13-74	SG-178	JJ
16	1-22-74	SG-170	SJC
15	1-22-74	SG-178	MJC
14	10-5-73	SG-114	SJC
13	9-11-73	SG-51	JJ
12	9-10-73	SG-60	SJC
11	7-27-73	SG-50	SJC

REVISIONS

NO	DATE	BULL. NO.	BY
10	5-10-73	SG-67	SJC
9	5-10-73	SG-33	JJ
8	12-19-72	SG-5	SJC
7	12-19-72	SG-56	PT
6	12-19-72	SG-16	JJ
5	12-19-72	SG-18	JJC
4	5-19-72	SG-10	JJC
3	1-20-72	SG-6	AE
2	9-17-71	SG-2	AE
1	7-10-71		JJC

REVISIONS

APPROVED

CHIEF, PLANNING DIVISION

DATE

THE WORLD TRADE CENTER
THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES — ARCHITECT
MINORU YAMASAKI, ARCHITECT

EMERY ROTH & SONS — MECHANICAL ENGINEERS
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JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS

THE PORT OF NEW YORK AUTHORITY — PAVING, UTILITIES, FOUNDATIONS

TITLE: WATER & F.S.P. RISER DIAGRAM

DRAWN		CHECKED	F.A.S.
SCALE	NONE	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-23		

DRAINS

	DESIGNATION	REQUIRED	ZURN INDUSTRIES MODEL NO.	BODY: CAST IRON, NICKEL BRONZE, ALL BRONZE, GALVANIZED, ALL BRONZE	BOTTOM OUTLET	45° OUTLET	SIDE OUTLET	OTHER OUTLET	CLAMPING DEV.	DECK CLAMP	BACK WATER VALVE	THREADED OUTLET	INSIDE CAULK	E.D. RECEIVER PLATE	CHROME PLATED	STRAINER: BRONZE MESH SCREEN, CAST IRON, LACQUER COATED, GALVANIZED, SEDIMENT BUCKET, SECONDARY STRAINER, BRONZE, NICKEL-BRONZE, CHROME-PLATED	SATIN FINISH	TRACTOR GRATE	DURESIST COVER	FUNNEL TOP	FLAT TOP	HIGH DOME	LOW DOME	EXTENSION PIECE	VERTICAL ADJUST.	TOP SIZE	ANGLE TYPE	RAISED LIP	BACK WATER VALVE	REMARKS: GENERAL AREA OF LOCATION
A		●	ZG-521	●		●				●			●	●			●					●			●	12¾				MECH. EQUIP RM'S.
* D		●	ZG-521 MOD.	●		●				●			●	●			●			●		●			●					
C		●	ZG-591	●		●				●			●	●			●			●		●			●				GARAGE & TENANT STORAGE
** D		●	ZG-543	●		●				●			●	●		●					●								SPRINKLER ALARM VALVE DISCH.
E		●	ZG-664	●		●				●			●	●					●			●							RAMP "H" TRENCH DR.
F		●	ZG-3241	●		●				●			●	●		●			●			●							M.E.2 INDIRECT WASTE RECEIVER.
⚠ G		●	ZN-415-B	●	●					●			●	●				●						●	●	5¾			SHOWER DR
*** H		●	ZN-3284	●		●				●			●	●		●					●	●							REFRIGERATION PLANT EL. 242'-0"
J		●	ZG-1509	●		●				●			●	●							●			●					SIDEWALK FINISHED LEVEL
K		●	ZG-121	●		●				●			●	●	●	●						●		●					UNDER SLAB DRAIN WEST OF TOWER 'B'
(L		●	ZG-650	●		●				●			●	●		●			●		●				●	10¢			GARAGE RAMP (UNDER ROOM) ⚠6)
M																													
N																													
O																													
P																													
Q																													
R																													
S																													
T																													

* MODIFIED WITH BOSS FOR 3" I.P.S. THREADED CONNECTION TO RECEIVE 3" I.P.S. CLOSE NIPPLE & 4¾" DIA FUNNEL 7½ HIGH WITH RECESSED DOME STRAINER TOP MODIFIED TO RECEIVE (3-0") THREE FOOT STANDPIPE. 14" DIA. CAULKED INTO TOP OF DRAIN (STANDPIPE BY PLUMBING CONTRACTOR)

⚠6 PROVIDE WITH SILT GRID

VALVE SCHEDULE ⚠

	VALVE SPECIFICATIONS: DESIGNATION	REQUIRED	FIG. NO.	SIZES	FLANGED	SOLDERED	SOLDERED	SOCKET	HOSE END	WITH HOSE PIPE	LOCK	BRONZE	IRON	ALL IRON	CAST STEEL	125# SWP	175# SWP	300# SWP	250# SWP	300# SWP	400# SWP	600# SWP	800# SWP	1500# SWP	1100# SWP	WHERE USED: HOSE AT EQUIP.	BURIED SERVICE	DOT 1 AT PUMP	DOT 1 A1 PUMP	DOT 5 AT PUMP	DOT AT TANKS	H.P. SUCTION	NAVAL CONNECTION (WITH CAPS)	F.S.P. ZONE 1	F.S.P. ZONE 1-1	F.S.P. ZONE 2	F.S.P. ZONE 3	F.S.P. ZONE 4	F.S.P. ZONE 6	SUMP DISCH.	EJECTOR DISCH. (WITH CAPS)	HOSE DR.	AIR THROTTLING (P-6)	NITROGEN (P-6)	GAS VENT	GAS VENT	1" VENT TO ROOF	1½" VENT TO ROOF	RUN INLET & VENT	RUN INLET & VENT	RISE
GATE VALVES		●	1215	½" - 8"	●				●			●	●					●																														
		●	571	½" - 3"	●							●	●					●																														
		●	570	½" - 3"		●						●	●					●																														
		●	1476A	½" - 3"			●					●	●					●																														
		●	677A	¼" - 8"	●							●	●					●																														
		●	630A	½" - 4"		●						●	●					●																														
		●	651A	¼" - 12"	●							●	●					●																														
		●	623	¼" - 6"	●							●	●					●																														
		●	926	¼" - 12"	●							●	●					●																														
		●	777	¼" - 8"	●							●	●					●																														
		●	959	¼" - 12"	●							●	●					●																														
		●	1094A	¼" - 6"	●							●	●					●																														
⚠		●	1206	¼" - 12"	●							●	●					●																														
		●	1273	½" - 3"			●					●	●						●																														
		●	1060K	¼" - 6"	●							●	●							●																														
		●	1060R	¼" - 12"	●							●	●							●																														
			1222	½" - 3"		●							●								●																														
		●	592	½" - 8"	●								●								●																														
		●	635	¼" - 6"	●								●								●																														
		●	294	½" - 3"	●								●								●																														
CHECK VALVES		●	289	½" - 8"		●							●								●																														
		●		½" - 3"			●						●								●																														
⚠		●	3318	2" - 8"									●								●																														
		●	1018C	¼" - 6"	●								●								●																														
		●	1619	2½" - 8"									●								●																														
		●	1617	2½" - 8"									●								●																														
		●	1272	½" - 2"			●						●								●																														
GLOBE & ANGLE VALVES		●	U-20	2½"		●							●								●																														
			106A	¼" - 6"			●						●								●																														
		●	106A	¼" - 8"		●							●								●																														
		●	108A	¼" - 8"		●							●								●																														
		●	119	¼" - 4"		●							●								●																														
		●	112	¼" - 4"		●							●								●																														
		●	1270	½" - 2"		●							●								●																														
			612	¼" - 4"			●						●								●																														
			613	¼" - 12"	●							●	●								●																														
PLUG VALVES		●	346 P	¼" - 2"		●							●								●																														
		●	1089+	½" - 2"		●							●								●																														
		●	181 +	¼" - 2"		●							●								●																														
		●	149 +	¼" - 2"		●							●								●																														

+ ROCKWELL-WORDSTROM VALVE CO. FIGURE

++ WILLIAMS & HAGER Co. FIGURE No.

+++ ELKHART Co. (REQ'D AT FIRE HOSE STATION)

++++ WALWORTH VALVE CO.

WATER CLOSET CARRIER FILLING SCHEDULE

CODE: TO ZURN FIXTURE SUPPORTS – LETTERS AND NUMBERS:

PREFIX LETTERS: Z – ZURN, E – EXTENDED FITTING WITH CUT OFF SERATIONS, Q – CLOSET CONNECTION, ADJUSTABLE FROM FINISHED WALL, U – "UNIVENT", VENT ON RUN ON SINGLE FITTINGS AND SINGLE VENT ON RUN ON DOUBLE FITTINGS AND T – 1½" OR 2" THREADED SANITARY AUX. INLET.

SERIES NUMBERS: 1203/1204 – "MONOLITHIC" OR SHALLOW ROUGH SYSTEM, HORIZONTAL OR VERTICAL, SINGLE OR DOUBLE AND 1205/1206 DEEP ROUGH SYSTEM, HORIZONTAL OR VERTICAL, SINGLE OR DOUBLE

SUFFIX NUMBERS: – 1, ONE HUB INLET AND – 2, TWO HUB INLETS.

SUFFIX LETTERS: S – SYPHON - JET SYSTEM, B – BLOW OUT SYSTEM, H – HUB & SPIGOT FITTINGS, Y – THREADED FITTINGS, R – RIGHT HAND HORIZONTAL FITTING OR RIGHT HAND HUB INLET – FITTING, L – LEFT HAND HORIZONTAL FITTING OR LEFT HAND HUB INLET FITTING, AND D – DOUBLE HORIZONTAL OR VERTICAL FITTING.

NOTE: "P" DIMENSION – FACE PLATE TO FIN. WALL: PROVIDE NIPPLE AND ADJUSTABLE NOSE PIECE

ZURN INDUSTRIES, INC. FIGURE NUMBER	FRONT ELEVATION	SIZE FITTING	SIZE OF HUB INLET OR INLETS	SIZE OF THREADED INLET	HUB & SPIGOT FITTING	THREADED FITTING	REGULAR LENGTH FITTING	EXTENDED FITTING	ADJUSTABLE FITTING	SEPERABLE FITTING (NON ADJ.)	OFFSET FITTING	FOR 15" RIM HEIGHT	FOR 19" RIM HEIGHT	SINGLE HORIZONTAL	DOUBLE HORIZONTAL	SINGLE VERTICAL	DOUBLE VERTICAL	RIGHT HAND FITTING	LEFT HAND FITTING	RIGHT HAND HUB INLET	LEFT HAND HUB INLET	TWO HUB INLETS	RIGHT HAND THREADED INLET	LEFT HAND THREADED INLET	SHALLOW ROUGH FTG.	DEEP ROUGH FTG.	FOOT NUMBER	BLOCK BASE BOLTED TO SLAB	CANTILEVER FOOT	LEAD GASKET & FITTING	"NEOSEAL" CLOSET GASKET	"TRUSEAL" FINISHING FR. (ALUM.)	2" VENT HUB CONN.	1½" MIN. "P" DIMEN.
ZQU – 1203 SHR OR L	LEFT HAND SHOWN	4"			●		●		●			●			●			●	●						●			●		●		●	●	●	●
ZQU – 1205 SHR OR L	LEFT HAND SHOWN	4"			●		●		●			●			●			●	●						●		#4	●		●		●	●	●	●
ZEQU – 1203 SHR OR L	LEFT HAND SHOWN	4"			●			●	●			●			●			●	●						●			●		●		●	●	●	●
ZEQU – 1205 SHR OR L	LEFT HAND SHOWN	4"			●			●	●			●			●			●	●						●		#4	●		●		●	●	●	●
ZEQU – 1203 SHD		4"			●			●	●			●				●										●			●		●	●	●	●
ZEQU – 1205 SHD		4"			●			●	●			●				●										●		#4	●		●	●	●	●
ZQU – 1206-1 STR OR L	RIGHT HAND SHOWN	4" & 5"	4"		●	●		●				●				●				●	●					●		#4	●		●	●	●	●
ZQUT – 1206-1 STR OR L	RIGHT HAND SHOWN	4" & 5"	4"	2"	●	●		●				●				●				●	●					●		#4	●		●	●	●	●
ZQU – 1206-2 ST.		4" & 5"	4"		●	●		●				●				●				●	●					●		#4	●		●	●	●	●
ZQU – 1206-2 STD		4"	4"		●	●		●				●				●				●	●					●		#4	●		●	●	●	●
ZQU – 1206-1 STR OR L	LEFT HAND SHOWN	4"	4"		●	●		●				●				●				●	●					●		#4	●		●	●	●	●
ZQUT – 1206-1 STR OR L	LEFT HAND SHOWN	4"	4"	2"	●	●		●				●				●				●	●					●		#4	●		●	●	●	●
ZQU – 1206-1 STD		4"	4"		●	●		●				●				●				●	●					●		#4	●		●	●	●	●
ZQUT – 1206-1 STD		4"	4"	2"	●	●		●				●				●				●	●					●		#4	●		●	●	●	●

NOTES:
1. NPT 1203 & 1204 SERIES FOR NORMAL ROUGH CLOSETS & 1205, 1206 SERIES FOR PARAPLEGIC CLOSETS (P-1A).
2. WHERE VERTICAL CARRIERS ARE REQUIRED CONTRACTOR HAS THE OPTION TO USE 1204 OR 1206 S.H.D.

URINALS (P-2)
SUPPORT TO BE ZURN Z-1222 CHAIR CARRIER WITH WEDGE LOCKING BLOCK TYPE FOOT SUPPORTS SECURELY BOLTED TO SLAB, UPPER SUPPORT PLATE AND LOWER BEARING PLATE, STEEL PIPE UPRIGHTS ADJUSTABLE SLEEVES AND ADJUSTABLE ALIGNMENT TRUSS

LAVATORIES (P-3)
SUPPORT TO BE ZURN ZU-1231 OR ZU 1233 CONCEALED ARM CHAIR CARRIER, SINGLE OR DOUBLE AS REQUIRED WITH WEDGE LOCKING BLOCK TYPE FOOT SUPPORTS SECURELY BOLTED TO SLAB, STEEL PIPE UPRIGHTS AND ADJUSTABLE ALIGNMENT TRUSS ARMS SHALL BE PROVIDED WITH LEVELING SCREWS AND LOCKING DEVICE AND SHALL BE DESIGNED TO RECEIVE CHROME PLATED CAST BRASS THREADED ESCUTHEONS.

SERVICE SINK (P-6)
SUPPORT ON ZB-1269 CHAIR CARRIER WITH HANGER PLATE, VITREOUS ENAMEL BRACKETS & BLOCK TYPE FEET.

NO.	DATE	SUB. NO.	BY
5	2-27-71	SG-136	S.J.
4	3-19-69	SG-10	B.V.
3	1-20-69	SG-6	W.B.
2	9-17-68	SG-2	J.C.
1	1-10-68		J.G.

REVISIONS

APPROVED:
CHIEF, PLANNING DIVISION
DATE

THE WORLD TRADE CENTER
THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES, MINORU YAMASAKI, ARCHITECT
EMERY ROTH & SONS, RICHARD ROTH, ARCHITECT
WORTHINGTON, SKILLING, HELLE & JACKSON, STRUCTURAL ENGINEERS
JAROS, BAUM & BOLLES, MECHANICAL ENGINEERS
JOSEPH R. LORING & ASSOCIATES, ELECTRICAL ENGINEERS
THE PORT OF NEW YORK AUTHORITY, PAVING, UTILITIES, FOUNDATIONS

TITLE: EQUIPMENT SCHEDULE NO. -1

DRAWN	P.J.T.	CHECKED	F.A.S.
SCALE	NONE	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-26		

KEY OF SYMBOLS

REQ'D	SERVICE	SYM. SYMBOL	SYM. LETTER
●	SOIL		S
●	WASTE		W
	ACID WASTE		AW
	INDIRECT WASTE		IW
●	LEADER		L
●	VENT		V
	ACID VENT		AV
	VAPOR VENT		VV
●	BURIED PIPING, W/SERVICE NOTED		
●	EXPOSED PIPING W/SERVICE NOTED		
●	EJECTOR DISCHARGE		EJD
●	SUMP DISCHARGE		SD
●	COLD WATER (STREET PRESSURE)		CW.
	COLD WATER (TANK ZONE -1)		CW1.
	COLD WATER (TANK ZONE - 2)		CW2.
	COLD WATER (TANK ZONE - 3)		CW3.
	COLD WATER (PNEUMATIC TANK)		CWPT
	HOT WATER (TANK ZONE -1)		HW1.
	HOT WATER (TANK ZONE - 2)		HW2.
	HOT WATER (TANK ZONE - 3)		HW3.
●	HOT WATER (STREET PRESSURE)		HW
	HOT WATER (PNEUMATIC TANK)		HWPT
●	HOT WATER CIRCULATION (STREET PRESS.)		HWC
	HOT WATER CIRCULATION (TANK ZONE-1)		HWC1.
	HOT WATER CIRCULATION (TANK ZONE-2)		HWC2.
	HOT WATER CIRCULATION (TANK ZONE-3)		HWC3.
	HOT WATER CIRC. (PNEUMATIC TANK)		HWCPT
●	AUTO BALL DRIP DISCHARGE		BD
	CHILLED DRINKING WATER		D
	CHILLED DRINKING WATER CIRCULATION		DC
	DISTILLED WATER		DW.
	DEIONIZED WATER		DIW
	SOFTENED COLD WATER		SCW.
	SOFTENED HOT WATER		SHW
	100° HOT WATER	100°	100°HW
	180° HOT WATER CIRCULATION	180°	180°HW

REQ'D	SERVICE	SYM. SYMBOL	SYM. LETTER
	PUMP DISCHARGE	PD	
●	FIRE STANDPIPE	F	FSP
●	SPRINKLER PIPING	SP	SP
	VACUUM CLEANING	VC	VC
	GAS PIPING	G	G
	COMPRESSED AIR PIPING	A	A
	VACUUM PIPING	V	V
	NITROGEN PIPING	N	N
	NITROUS OXIDE PIPING	NO	NO
	OXYGEN PIPING	O	O
	HYDROGEN PIPING	H	H
●	TEMP. DRY FIRE STANDPIPE	DFSP	DFSP

VALVES

REQ'D	SERVICE	SYM. SYMBOL	SYM. LETTER
●	CHECK VALVE	CK	CV.
●	HAND VALVE ON HORIZONTAL	GV	
●	VALVE ON VERTICAL	GV	
●	O.S.&Y. VALVE	OSY	
●	SOLENOID VALVE	SV	SV
●	PRESSURE RELIEF VALVE	RV	RV
●	PRESSURE REDUCING VALVE (PLAN)	PRV	PRV
●	DIAPHRAGM VALVE	DV	DV
	3-WAY DIAPHRAGM VALVE	3DV	
	3-WAY HAND VALVE	3GV	
●	VACUUM BREAKER	VB	VB
●	AIR VENT VALVE	AVV	AVV

FITTINGS

REQ'D	SERVICE	SYM. SYMBOL	SYM. LETTER
●	SINGLE C.O. RUNNING TRAP		
●	DOUBLE C.O. RUNNING TRAP		
●	TRAP W/C.O. BRYND TO COOP.		
●	CLEANOUT DECK PLATE		CODP
●	AUTO BALL DRIP		ABD
●	FIRE HOSE RACK		HR
●	FIRE HOSE CABINET		HC
●	HOSE GIBB		H.B.
●	WALL HYDRANT		W.H.
●	BOX HYDRANT		B.H.
●	THERMOMETER WELLS		

WATER HAMMER ARRESTORS ALTERNATE TO AIR CHAMBERS

BRANCH SIZE	SHOCKTROL NO.*	MAX PRESSURE	MAX LENGTH OF BRANCH RUN
¾"	100	90	25'
1"	100	90	25'
1¼"	300	90	25'
2"	400	90	25'
2½"	400	90	25'

* ZURN INDUSTRIES INC.

NOTE: LOCATE ARRESTORS AT TOP OF THE BRANCH PRIOR TO FIXTURES AS INDICATED ON ¼" SCALE DETAILS.

FIXTURE CONNECTION SCHEDULE

FIXTURES		SOIL/WASTE	FIXTURE UNITS			WASTE	VENT	CW	HW	TRAP SIZE	REMARKS
WATER CLOSETS			PU	PR	GRAV						
WALL HUNG	FLUSH VALVE	●	●			4"	2"	1½"	1½"	P.T.	
WALL HUNG	FLUSH VALVE	●		●		4"	2"	1½"	1½"	P.T.	HANDICAPPED
FLOOR MOUNTED	FLUSH VALVE				●	4"	2"	1½"	1"		
FLOOR MOUNTED	FLUSH TANK				●	4"	2"	1½"	1"		
URINALS			PU	PR/GR							
	WASH OUT	●	●			2"	1½"	¾"	¾"	1½"	
	SLUSH OUT					2"	1½"	¾"	¾"	1½"	
	FLUSH OUTLET					2"	1½"	¾"	1"		
LAVATORIES			PU	PR/GR							
		●	●			1½"	1½"	½"	½"	1½"	NEW
		●	●			1¼"	1½"	½"	½"	1½"	ARMAN
SLOP SINKS			PU	PR/GR							
	WALL HUNG	●		●		2"	1½"	½"	½"		
	FLOOR MOUNTED					3"	1½"	½"	½"		
	CAST SPTD	●	●			3"	1½"	½"	½"		
SHOWERS			PU	PR/GR							
		●	●			2"	1½"	½"	½"	1½"	MEASURE TO SHOWER HEAD
DRINKING FOUNTAIN		●	DU			1½"	1½"	¼"			
ELECTRIC WATER COOLER			PU			1½"	1½"		¼"		
SERVICE SINKS		●	PU			3"	1½"	½"	½"		SEE DETAIL ON P-X-21
BATH TUBS						2"	1½"	½"	½"		
SINKS			PU	PR/GR							
	KITCHEN					2"	1½"	½"	½"		
	LABORATORY					2"	1½"	½"	½"		

* ½" C.W. TO W.C. FLUSH VALVE * ABOVE FIXTURE

GENERAL NOTES:

1- FOR PLUMBING & SPRINKLER DWG'S NOS. & TITLES SEE ARCH. DWG. A-JC-2

2- WHERE PLUMBING PENETRATIONS ARE REQUIRED BECAUSE OF PIPING, PROVIDE 18 GAUGE STEEL SHEET, FULL SIZE OF GYPSUM WALL CLOSURE SHEET AS INDICATED ON ARCH. DWG.

3- PIPING SHOWN DOUBLE LINE IS TENTATIVE & CONTRACTOR SHALL NOT INSTALL UNTIL AUTHORIZED BY THE ENG. / AUTH.

4- PIPING INDICATED AS BEING IN THE EXISTING TUBE REMOVAL AREA (SHADED AREA ON DWGS.) SHALL NOT BE INSTALLED UNTIL TUBES ARE REMOVED & SLAB IS POURED.

PUMPS

DESIGNATION	No. REQUIRED	G. P. M.	MAX. T.D.H.	MIN. T.D.H.	MECH. SEAL	MODEL *	STAGES	VERT. SPLIT	HORIZ. SPLIT	WORKING PRESS	H.P.	R.P.M.	VOLTS	PHASE	CYCLE	MANUAL CONT'L.	STARTING STEPS	AUTO. CONT'L.	PILOT LIGHT	PRESSURE GUAGE RANGE	METAL BASIN	CONCRETE PIT
** SUMP PUMP ELEV. PIT	1	20	23	⚠		SS-805-RJT					⅓	1750	120	1	60			●	●			●
* SUMP PUMP No. 1	3	350	94	94		6-CNBKU-4-FC					20	1750	460	3	60			●	●			●
* 2	3	350	94	84		6-CNBKU-4-FC					20	1750	460	3	60			●	●			●
* 3	3	350	90	80		6-CNBKU-4-FC					20	1750	460	3	60			●	●			●
* 4	3	350	90	80		6-CNBKU-4-FC					20	1750	460	3	60			●	●			●
* EJECTOR PUMP No. 1	2	350	102	84		6-CSBMU-4-FC L-C-6822					20	1750	460	3	60			●	●			●
* 2	2	350	110	86		6-CSBMU-3-FC L-C-6822					20	1750	460	3	60			●	●			●
* 3	2	350	105	85		6-CSBMU-4-FC L-C-6822					20	1750	460	3	60			●	●			●
* 4	2	350	110	86		6-CSBMU-4-FC L-C-6822					20	1750	460	3	60			●	●			●
* 5	2	350	105	85		6-CSBMU-4-FC L-C-6822					20	1750	460	3	60			●	●			●
* 6	2	350	98	83		6-CSBMU-4-FC L-C-6822					20	1750	460	3	60			●	●			●
H.W. CIRC. **	1	10	6			100					1/15		115	1	60							
* SUMP PUMP No. 5	3	450	94	84		C-CSBMU-5-FC					25	1750	460	3	60			●	●			●
⚠																						

* WEIL PUMP Co. ** BELL & GOSSETT Co.

H.W. HEATER ** - (1 REQ'D - LOCATED IN JANITOR'S CLOSET NORTH AREA PLATFORM "C" EL. 250'-0")

PROVIDE (1) 12KW - 3 PH. TOTAL OF 36KW ELECTRIC WATER HTR. - COPPER SILICON 480 V. 3 PHASE, 60 CY. A.C. AS MANUFACTURED BY RUSSELL-FINEX ELECTRIC HEATER CO. STRATFORD, CONN. OR EQUAL.

** WEIL PUMP CO.-PRIMER ONE SUMP PUMP IN EACH ELEV. PIT WHERE INDICATED ON PLUMBING DWG'S.

MATERIAL SCHEDULE

SYSTEMS	PIPE: REQUIRED	PIPE: C.I.	PIPE: STL. SCHED. 40	PIPE: STL. SCHED. 80	PIPE: BLACK	PIPE: GALVANIZED	PIPE: C.T.	PIPE: R.B.P.	PIPE: C.I.W.P.	PIPE: D.I.S.P. (CLASS I)	PIPE: D.I.S.P. (MECH. JOINT)	PIPE: TAR COATED	FITTINGS: C.I. SOIL	FITTINGS: C.I. DRAINAGE	FITTINGS: STD. C.I. - 175# W.W.P.	FITTINGS: EX. W.C.I. - 400# W.W.P.	FITTINGS: STD. C.I. FLG. - 175# W.W.P.	FITTINGS: STD. M.I. - 300 lbs.	FITTINGS: TAR COATED	FITTINGS: CAST BRONZE-175# SWG. THREADED	FITTINGS: CAST BRONZE 400 - W.W.P.	FITTINGS: CAST STEEL 300# SWG. SOCKET WELD	FITTINGS: CLASS 2 (MECH. JOINT)	FITTINGS: CLASS D (MECH. JOINT)	FITTINGS: CLASS I (MECH. JOINT)	FITTINGS: BLACK	FITTINGS: GALVANIZED	JOINTS: CAULKED	JOINTS: THREADED	JOINTS: SOLDERED	JOINTS: WELDED	JOINTS: BRAZED	JOINTS: MECH. JOINT
DRAINAGE (BURIED)	●	●											●															●					
VENTS (BURIED)	●	●										●	●						●									●					
HOUSE DRAINS FROM TOWERS-UP TO 10'-0" OF HOUSE TRAP	●		●			●							●															●	●				
* HOUSE DRAINS EXCEPT FROM TOWERS	●	●	●			●							●	●														●	●				
* SANITARY & WASTE STACKS	●	●	●			●							●	●														●	●				
* SANITARY & WASTE BRANCHES	●	●	●			●							●	●														●	●				
* LEADERS (EL 111' & BELOW)	●	●	●			●							●	●														●	●				
STORM HOUSE SEWERS	●									●																●							●
* VENTS	●	●	●			●							●		⚠			●	⚠									●	●				
C.W. 3½" & SMALLER	●							●													●										●		
C.W. 4" & LARGER	●							●													●										●		
DRINKING WATER																																	
** C.W. BY G. METER ROOMS (60' OUTSIDE SLURRY WALL TO ELEVATOR INSIDE ROOMS)	●							●																		●			●			●
H.W.	●							●													●										●		●
BURIED C.W.																																	
FIRE STANDPIPE	●			●																						●					●		
COMBINED HOUSE SEWERS (IN UTILITY RACK)	●									●																●							●
COMPRESSED AIR																																	
SOAP SYSTEM																																	
SUMP & EJECTOR DISCH. (BURIED)	●									●														●		⚠	●					●	
SUMP & EJECTOR DISCH. (NOT BURIED)	●		●			●							●																●				
*** RIVER WATER DRAINAGE (REFRIGERATION PLANT) ⚠	●									●																●							●

* CONTRACTORS OPTION TO USE EITHER C.I. OR STEEL PIPING SYSTEM.
** CONTRACTOR'S OPTION
*** CEMENT LINED DUCTILE IRON SEWER PIPE
⚠

REVISIONS						REVISIONS					
NO.	DATE	SUB. NO.	BY	NO.	DATE	SUB. NO.	BY				
				6	12-19-88	56-18	J.C.				
				5	6-5-87	56-15	J.C.				
				4	3-15-87	56-10	J.C.				
				3	1-30-87	56-6	J.C.				
				2	7-17-86	56-2	J.C.				
				1	7-1-86		J.C.				

APPROVED

CHIEF, PLANNING DIVISION

DATE

THE WORLD TRADE CENTER
THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES
MINORU YAMASAKI, ARCHITECT

EMERY ROTH & SONS
RICHARD ROTH, ARCHITECT

WORTHINGTON, SKILLING, HELLE & JACKSON
STRUCTURAL ENGINEERS

JAROS, BAUM & BOLLES
MECHANICAL ENGINEERS

JOSEPH R. LORING & ASSOCIATES
ELECTRICAL ENGINEERS

THE PORT OF NEW YORK AUTHORITY
PAVING, UTILITIES, FOUNDATIONS

TITLE: EQUIPMENT SCHEDULE NO-2

DESIGN	P.J.T.	CHECKED	F.A.S.
DRAWN	NONE	DATE	5-15-88
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-27		

N 5200

N 5100

N 5000

N 4900

N 4800

N 4700

W 10400.00 | W 10300.00 | W 10200.00 | W 10100.00 | W 10000.00 | W 9900.00 | W 9800.00

N 5204.40 W 10418.80

N 5275.00 W 10191.48

N 5208.21 W 10018.87

N 5200.00 W 9858.00

N 5060.80 W 9838.00

N 4826.00 W 10650.00

N 4821.50 W 9783.00

N 5041.87 W 10353.86

N 5082.56 W 10389.81

N 5014.16 W 10375.59

N 4981.90 W 10431.90

N 4985.27 W 10438.96

N 4961.07 W 10467.96

N 4991.55 W 10392.38

N 4952.26 W 10437.90

N 4958.41 W 10413.42

N 4994.28 W 10326.27

N 4932.49 W 10410.54

See Detail 1, Dwg. R-77 (WTC-130.002) for connection to C.I. Pipe at Rotunda wall Typ.)

EJECTOR No. 1

EJECTOR No. 2

EJECTOR No. 3

EXIST. PATH TUBE

SUMP PIT #1

SUMP PIT #2

SUMP PIT #3

TOWER "A"

NOTE: FOR TRENCHES IN TOWER "A" SEE DWG R-72 & R-73 OF WTC-130.002

Inv. El. 242.00

Inv. El. 239.83

Inv. El. 239.73

Inv. El. 239.57

Inv. El. 239.39

Inv. El. 239.60

Inv. El. 239.65

Inv. El. 247.50

Inv. El. 247.42

Inv. El. 242.16

Inv. El. 239.72

C.O.D.P.

PITCH

6" X.S.

8" X.S.

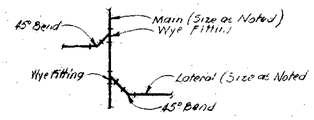
12" X.S.

16" X.S.

Tracks No. 1, 2, 3 & 4

NOTE:

1. ALL PIPES IN TRACK AREA SHALL BE EXTRA STRENGTH POROUS CONCRETE PIPE.
2. ALL MAINS 10" & 12" SHALL PITCH @ V8"/10'-0"
3. ALL 6" LATERALS IN THE PLAZA AREA SHALL BE RUN FLAT WITH A INV. ELEV 239.83 UNLESS OTHERWISE NOTED.
4. ALL 6" LATERALS IN THE TRACK AREA SHALL BE RUN FLAT WITH A INVERT EL. 242.00 UNLESS OTHERWISE NOTED.
5. BACKFILL FOR ALL 10" OR 12" MAINS SHALL BE TYPE 1 FILTER.
6. FOR TRENCH LOCATIONS SEE DWG R-60 THRU R-74 OF WTC 130.002



TYPICAL LATERAL & MAIN CONNECTION
Not to Scale

MATCH LINE N 4735.00

REV. NO.	CHIEF ENGINEER
2	
3	

NO	DATE	BY	DESCRIPTION	CHIEF STR. ENGINEER
2	6/14/69	J.S.	REVISED POROUS PIPE LAYOUT TO CONFORM TO TRENCHES AS SHOWN IN DWG R-60 THRU R-74 OF WTC-130.002	
3	7/25/69	J.S.	ADDED POROUS PIPES UNDER CORNER DIAPHRAGM	

1-29-68 S.P.

NO. DATE SUB. NO. BY — REVISIONS

NO. DATE SUB. NO. BY — REVISIONS

CHIEF STRUCTURES DIVISION

APPROVED

CHIEF, PLANNING DIVISION

DATE

THE WORLD TRADE CENTER

THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES
MINORU YAMASAKI, ARCHITECT

EMERY ROTH & SONS
RICHARD ROTH, ARCHITECT

WORTHINGTON, SKILLING, NELLE & JACKSON
STRUCTURAL ENGINEERS

JAROS, BAUM & BOLLES
MECHANICAL ENGINEERS

JOSEPH R. LORING & ASSOCIATES
ELECTRICAL ENGINEERS

THE PORT OF NEW YORK AUTHORITY
PAVING, UTILITIES, FOUNDATIONS

TITLE: SUB GRADE PLAN - ZONE J
SUB - DRAINAGE PLAN

DRAWN | CHECKED

SCALE 1/16" = 1'-0" | DATE May 15, 68

PROJECT NUMBER | SHEET OF

DRAWING NUMBER PX-50

MATCH LINE N.4795.00

N.4700.00

N.4600.00

N.4500.00

N.4400.00

N.4300.00

N.4589.80 W.10208.60

N.4549.32 W.10264.77

N.4530.00 W.10297.25

N.4530.33 W.10272.89

N.4564.06

N.4501.98 W.10275.79

N.4495.00

N.4500.81 W.10247.36

N.4479.59 N.10240.66

N.4475.90 W.10178.90

N.4258.00 W.10108.30

N.4510.37 W.9923.17

N.4505.90 W.9679.17

N.4645.80 W.9659.30

N.4269.98 W.9912.90

N.4249.87 W.9625.00

SUMP PIT #5

SUMP PIT #4

EJECTOR #3

EJECTOR NO. 4

EJECTOR NO. 6

TOWER "B"

See Detail I, Dwg. R-77 (WTC-130.002) for Connection to CI. Pipe at Retaining wall (Typ.)

CONNECT TO 6" ø POROUS PIPE HEADER

NOTE: FOR TRENCHES IN TOWER "B" USE DWG. R-76 (WTC-130.002)

TRACK #1 & 2

TRACK #3 & 4

TRACK #5 & 6

NOTE

1. ALL PIPES IN TRACK AREA SHALL BE EXTRA STRENGTH POROUS CONCRETE PIPE.
2. ALL MAINS 10" & 12" SHALL PITCH @ 1/8"/10'-0".
3. ALL 6" LATERALS IN THE PLAZA AREA SHALL BE RUN FLAT WITH AN INVERT EL. 239.83 UNLESS OTHERWISE NOTED.
4. ALL 6" LATERALS IN THE TRACK AREA SHALL BE RUN FLAT WITH AN INVERT EL. 242.00 UNLESS OTHERWISE NOTED.
5. BACKFILL FOR ALL 10" OR 12" MAINS SHALL BE TYPE I FILTER.
6. FOR TRENCH LOCATIONS SEE DWG R-60 THRU R-74 OF WTC 130.002.

REV. NO.	CHIEF ENGINEER
2	
3	

NO.	DATE	BY	DESCRIPTION	CHIEF SITE ENGINEER
2	4/16/69	J.S.	REVISED POROUS PIPE LAYOUT TO CONFORM TO TRENCHES AS SHOWN IN DWG. R-60 TO R-74 OF WTC-130.002	
3	7/25/69	J.S.	ADDED POROUS PIPES UNDER CORNERS DIAPHRAM	

1-7-968 5.0

NO. DATE BUL. NO. BY — REVISIONS

NO. DATE BUL. NO. BY — REVISIONS

CHIEF CIVIL ENGINEER

CHIEF STRUCTURAL ENGINEER

APPROVED

CHIEF, PLANNING DIVISION

DATE

THE WORLD TRADE CENTER

THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES — MINORU YAMASAKI, ARCHITECT

EMERY ROTH & SONS — RICHARD ROTH, ARCHITECT

WORTHINGTON, SKILLING, HELLE & JACKSON — STRUCTURAL ENGINEERS

JAMES, BAUM & BOLLES — MECHANICAL ENGINEERS

JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS

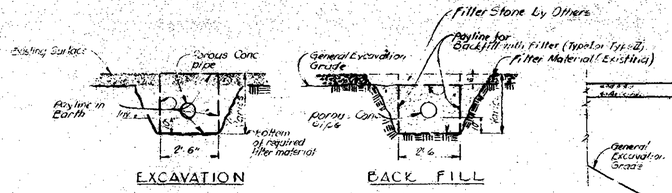
THE PORT OF NEW YORK AUTHORITY — PORT, UTILITIES, FOUNDATIONS

TITLE: SUB GRADE PLAN - ZONE K

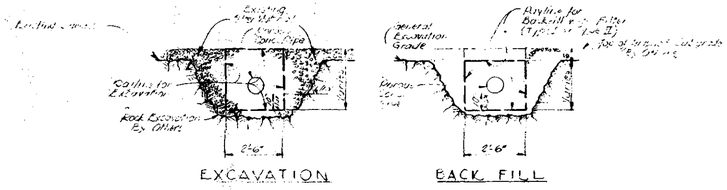
SUB - DRAINAGE PLAN

DRAWN	C.N.L.	CHECKED	
SCALE	1/8" = 1'-0"	DATE	May 15, 68
PROJECT NUMBER		SHEET	OF

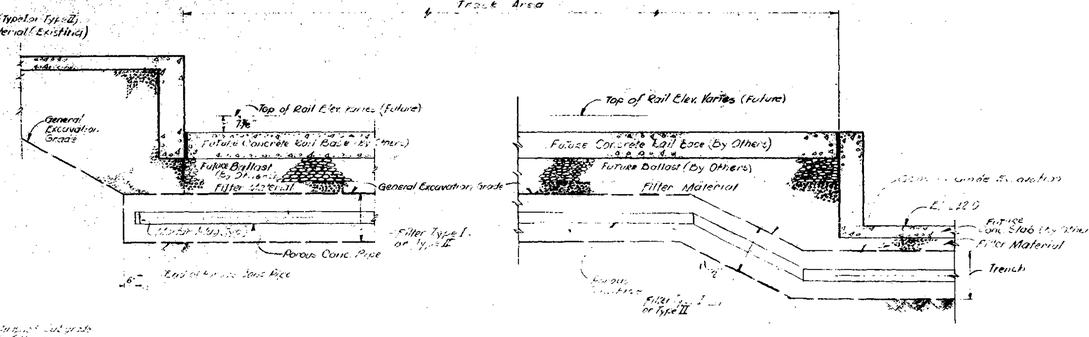
DRAWING NUMBER: PX-51



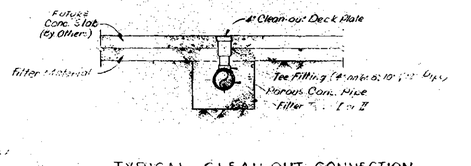
DRAINAGE TRENCH IN EARTH



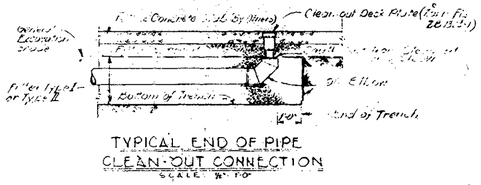
DRAINAGE TRENCH IN ROCK



TYPICAL CROSS-SECTION THROUGH TRACK AND PLATFORM AREA

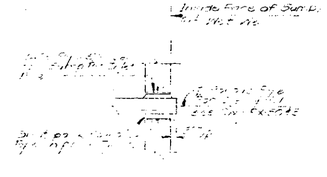


TYPICAL CLEAN-OUT CONNECTION
SCALE: 1"=1'-0"

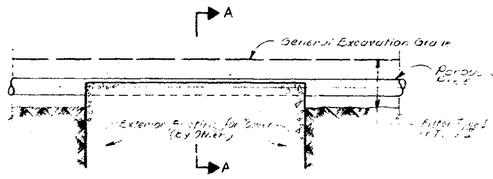


TYPICAL END OF PIPE CLEAN-OUT CONNECTION
SCALE: 1"=1'-0"

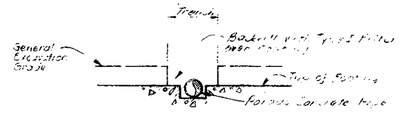
NOTE:
FILTER SHALL BE TYPE I OR TYPE II (SEE SPECIFICATIONS) AS DETERMINED BY THE ENGINEER IN THE FIELD.



TYPICAL DETAIL OF POROUS CONCRETE PIPE AT INLET CONNECTION



DETAIL OF POROUS CONCRETE PIPE OVER EXTERIOR TOWER FOOTING



SECTION A-A

NOTE:
1. FOR GENERAL EXCAVATION GRADES, SEE CONTRACT NO. C-186.002, DRAWINGS No. PX-50.1 THRU PX-50.5 INCLUSIVE.
2. FOR TRENCH LOCATIONS, SEE DWG PX-50.2 THRU PX-50.5 INCLUSIVE.

REV NO	DATE	BY	DESCRIPTION
2			REVISED POROUS PIPE LAYOUT TO CONFORM TO REVISIONS AS SHOWN ON DWG. PX-50.2 & 50.3 OF NTC 130.002

CHIEF ENGINEER

CHIEF STR. ENG. - ELE.

1-7-66 — REVISIONS

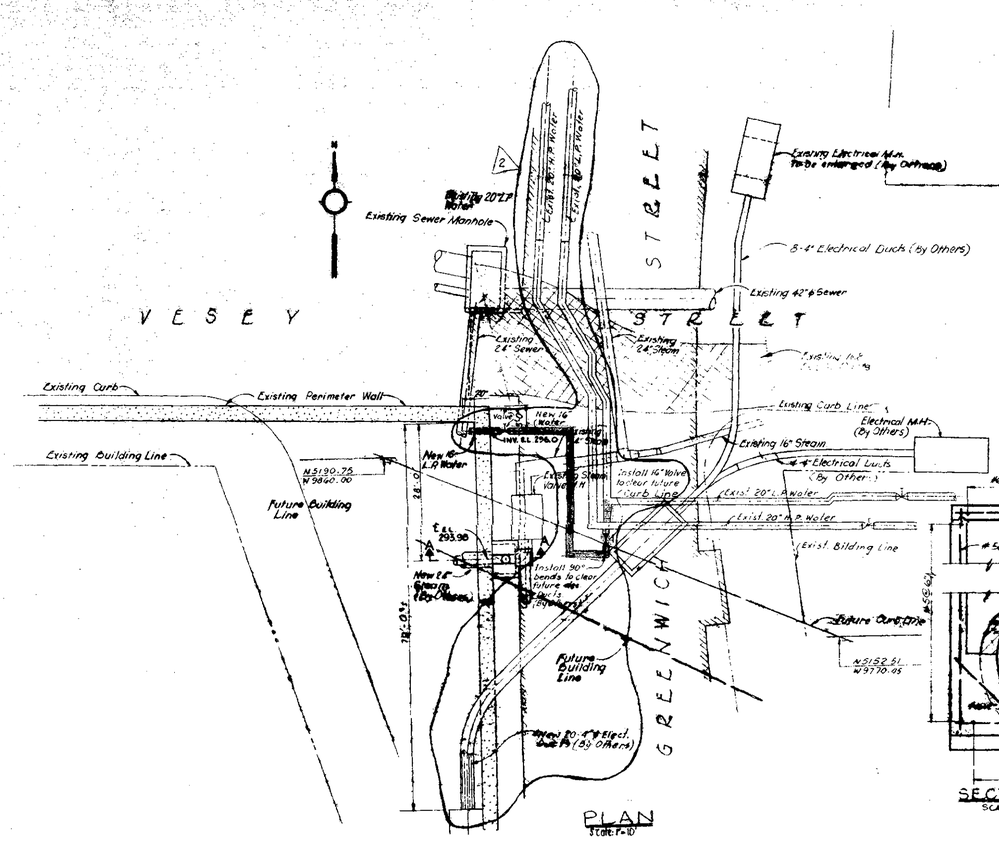
APPROVED — CHIEF, PLANNING DIVISION — DATE

THE WORLD TRADE CENTER
THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES — MINORU YAMASAKI, ARCHITECT
EMERY ROTH & SONS — RICHARD ROTH, ARCHITECT
WORTHINGTON, SKILLING, HELLE & JACKSON — STRUCTURAL ENGINEERS
JAROS, BAUM & BOLLES — MECHANICAL ENGINEERS
JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS
THE PORT OF NEW YORK AUTHORITY — PAVING, UTILITIES, FOUNDATIONS

TITLE: SUB-GRADE PLAN
SUB-DRAINAGE DETAILS

DRAWN: E.W.F. — CHECKED:
SCALE: 1"=1'-0" — DATE: 12-23-65
PROJECT NUMBER: — SHEET OF
DRAWING NUMBER: PX-52


VESEY STREET
GREENWICH STREET
Existing Curb
Existing Perimeter Wall
Existing Building Line
Future Building Line
Existing Sewer Manhole
Existing Electrical Mh. To be enlarged (By Others)
8'-4" Electrical Ducts (By Others)
Existing 42" ø Sewer
Existing 24" Sewer
Existing 24" Steam
Existing Curb Line
Electrical MH. (By Others)
Existing 16" Steam
4"ø Electrical Lines (By Others)
Exist. 20" L.P. Water
Exist. 20" H.P. Water
Exist. Bilding Line
Future Curb Line
Existing 42" ø Sewer
Existing 24" Steam
Existing 16" H.P. Water
Existing 20" L.P. Water
Existing 20" H.P. Water
Existing 20" C.I.P. Water
Existing 20" C.I.P. Water
Existing 20" C.I

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WORTHINGTON, SKILLING, HELLE & JACKSON — STRUCTURAL ENGINEERS

JAROS, BAUM & BOLLES — MECHANICAL ENGINEERS

JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS

THE PORT OF NEW YORK AUTHORITY — PAVING, UTILITIES, FOUNDATIONS

TITLE: F.S.P. RISER DIAGRAM

DRAWN	F. A.	CHECKED	F. A. S.
SCALE	NO SCALE	DATE	3-6-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-3-6-68		

REVISIONS

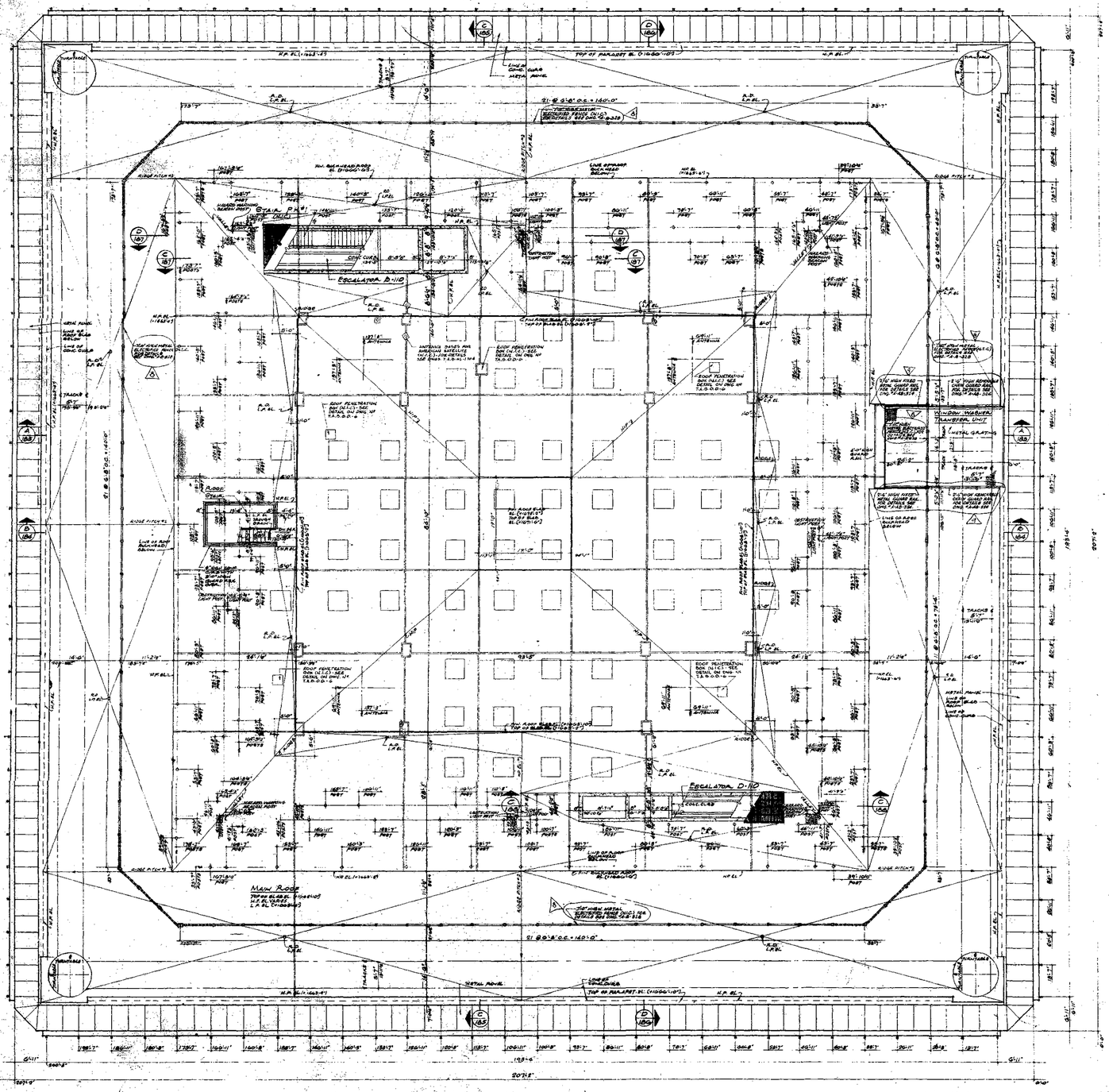
NO.	DATE	SUB. NO.	BY
1	6 7 74	S.I.C.	

APPROVED

CHIEF, PLANNING DIVISION

DATE

FILE AT END OF SUB GRADE PLUMBING



NORTH

NOTES:

1. FOR GENERAL NOTES, KEY TO MATERIALS, SYMBOLS, ABBREVIATIONS, PLUMB BOBSIGHTS, DOORS, BOBSIGHTS AND SCHEDULE OF DRAWINGS SEE DRAWING A-0.1 TO A-0.9.
2. ALL ELEVATIONS (EXCEPT FOUR (4)-0") ARE IN RELATION TO NEW YORK CITY DATUM.
3. ALL ELEVATIONS (EXCEPT FOUR (4)-0") ARE IN RELATION TO DATUM OF BUILDING.
4. FOR MECHANICAL AND ELECTRICAL LAYOUTS SEE ARCHITECTURAL BULKHEAD DRAWINGS.
5. ALL ELEVATIONS GIVEN THUS (2010') ARE GIVEN IN RELATION TO BUILDING DATUM.

1/8"=1'-0" 0 4' 8' 16' 24'

CONTRACT 815 DRAWING data

BULLETINS, NOT DATED ARE IN THE PROCESS OF COMPLETION

NO.	DATE	BUL. NO.	BY
1	6-30-76	B-268	LJ.
2		B-280	LJ.
3	10-26-76	B-346	DS.
4	10-9-72	B-257	L.J.
5	3-8-73	B-487	DS.
6	10-25-72	B-188	DS.
7	10-25-72	B-191	DS.
8	9-7-72	B-145	LC.
9	2-23-71	B-137	LJ.

REVISIONS

APPROVED

CHIEF, PLANNING DIVISION

DATE

THE WORLD TRADE CENTER

THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES — MINORU YAMASAKI, ARCHITECT
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JAROS, BAUM & BOLLES — MECHANICAL ENGINEERS
JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS
THE PORT OF NEW YORK AUTHORITY — PAVING UTILITIES, FOUNDATIONS

TITLE: INTERMEDIATE BULKHEAD & ROOF DRAINAGE PLAN

DRAWN | CHECKED
SCALE 1/8"=1'-0" | DATE 10-10-72
PROJECT NUMBER | SHEET OF
DRAWING NUMBER A-B-W A

TOWER B | Plumbing Bulkhead Roof